

**CALIFORNIA
MOTOR VEHICLE STOCK, TRAVEL AND FUEL
FORECAST**



California Department of Transportation

Transportation System Information Program

November 2000

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**CALIFORNIA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION SYSTEM INFORMATION PROGRAM**

NOVEMBER 2000

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Conversion Factors

The following factors are used in this report to convert U.S. units to metric units.

$$\text{Kilometers} = 1.609 \times \text{Miles}$$

$$\text{Liters} = 3.785 \times \text{Gallons}$$

I. SUMMARY

This is the sixteenth of a series of California Motor Vehicle Stock, Travel and Fuel Forecast (MVSTAFF) reports. The reports provide historical estimates and forecasts of the number of registered vehicles, miles of travel, fuel consumption, and fuel economy on a statewide basis. The forecasts are disaggregated into six vehicle body types (autos, four weight classes of trucks, and motorcycles) and two fuel types (gasoline and diesel).

The forecasts are primarily intended for short and long range statewide transportation planning, traffic forecasting and projections of revenues from excise taxes on fuel. In response to numerous requests, the statewide vehicle miles of travel (VMT) forecasts are distributed among the 58 counties and two major road systems (State Highways and all "Other" public roads) for substate planning, including transportation and air quality modeling and analysis. For the purpose of air quality conformity analysis the 1990 county VMT table is included in the appendix. Also included in this report are the vehicle fuel consumption (VFC) distributions by the 58 counties and the two-fuel types gasoline and diesel.

The MVSTAFF process requires long-term projections of statewide population, economic growth (total personal income), fuel prices, inflation, and interest rates. For this forecast, population numbers were obtained from the latest California Department of Finance (DOF) population projection reports (Ref. 4 and 5). All other variables, including fuel price, were derived from the WEFA Group, "U.S. Long-Term Economic Outlook, 3rd Quarter 2000" (Ref. 7). The WEFA Group projections represent a "trend/moderate growth" scenario. The MVSTAFF forecast, therefore, reflects the same scenario superimposed on the DOF population projections and the existing legislation regarding current and future sales and excise taxes on fuel. The socioeconomic assumptions are further documented in the report.

The forecast results are summarized in Figure-S1. For the current year (2000), total vehicle miles of travel (VMT), and vehicle fuel consumption (VFC) are projected to increase by 2.34%, and 2.46%, respectively, from the previous year.

In 2001, the economy is expected to rise moderately. Real total personal income per person, total vehicles, VMT and fuel consumption are projected to increase by 2.25%, 2.65%, 2.13% and 1.85% respectively.

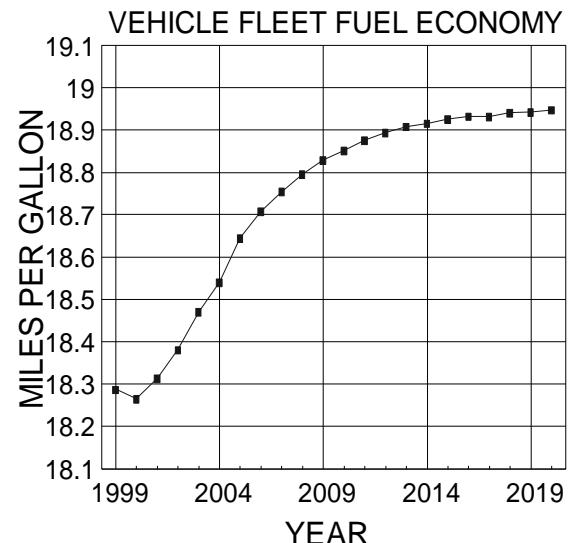
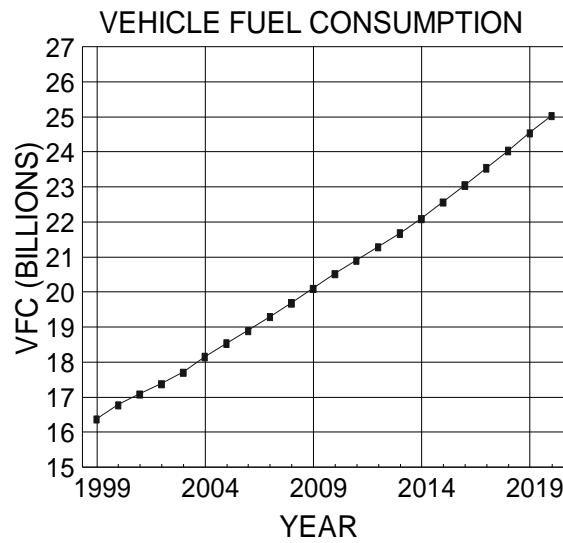
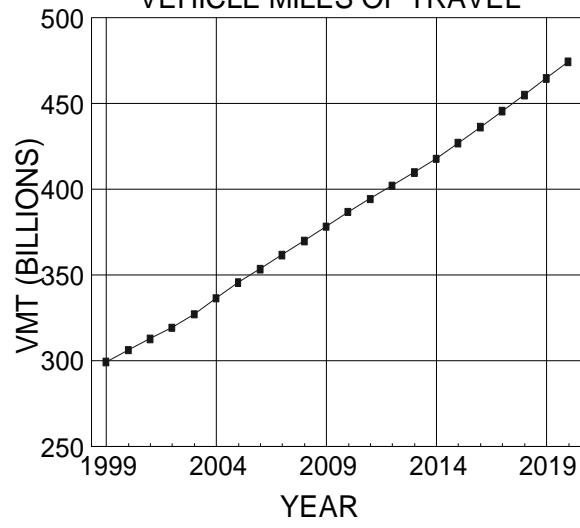
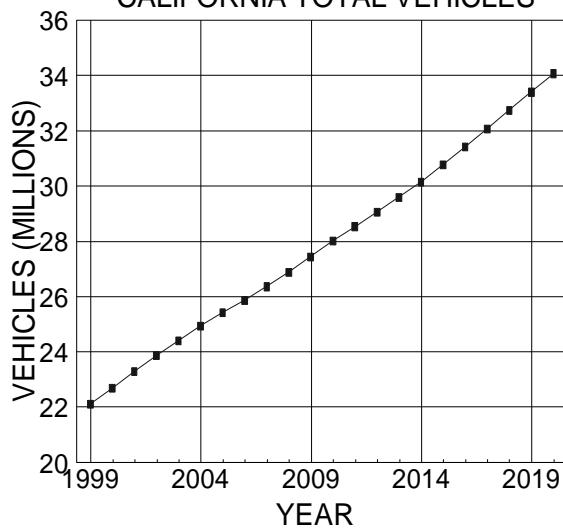
The long-term forecast is for total vehicles, vehicle travel, and fuel consumption to continue to increase but at declining rates. Under the assumption that the Corporate Average Fuel Economy (CAFE) standard for new cars will remain at 27.5 miles per gallon, and the projected increase in the proportion of heavy duty truck travel, the fleet fuel economy will reach a peak value of 18.95 miles per gallon by year 2020.

Past and projected growth in California vehicle miles of travel are affected by: population, real total personal income per person (IPP), vehicles per person (VPP), and the fuel cost per mile (FCPM) of travel, all of which are put in a historical perspective in Figure-S2. The figure shows the percent change in the variables, from the beginning of one decade to the next, for the past 50 years and the 20-year forecast period. The following can be noted from the figure:

- The decade of the 1950's experienced a 71% increase in VMT which was driven primarily by a 49% increase in population and helped along with moderate increases in per capita total personal income and vehicle ownership.
- The 1960's saw a 64% increase in VMT although population grew at about half the rate that it did in the 1950's (26% vs. the previous 49%). The driving force in the 1960's would appear to be the growth in per capita income and vehicle ownership, the highest in the 50-year history.
- The 1970's produced the smallest percentage increase in VMT (38%) in the first 40 years as a result of the lowest percentage increase in population in this 40-year period, a slower growing economy and sharply rising fuel prices (55%) in the last half of the decade.
- In the 1980's, VMT grew by 62%, rivaling its growth in the 1950's and 1960's. At the same time per capita income and vehicle ownership grew by only 12% and 7%, respectively. Most of the growth in VMT in the 1980's can therefore be attributed to strong population gains (26%) and the precipitous drop in the real fuel cost per mile of travel (57%), resulting from a 45% drop in the real price of fuel and a 30% increase in the on-road fleet fuel economy.
- In the 1990's, VMT grew by only 19% as population growth slows down to 16%; personal income shows moderate (14%) growth. Fuel cost per mile increases 10% due to a sharp increase in fuel prices in 1999 and 2000.
- In the 2000's and 2010's VMT is forecasted to grow moderately (22% and 21%) as population growth rates decrease slightly under the 1990's (15% and 14%), personal income increase moderately (18% and 23%). Fuel cost per mile is expected to drop 18% in the 2000's but become stable in the 2010's.

Estimates of total system and state highway system vehicle miles of travel for the period 1965-2020 are shown in Figure-S3. Estimates of gasoline, diesel and total fuel consumption for the years 1965-2020 are shown in Figure-S4.

Figure-S1
Motor Vehicle Stock, Travel and Fuel Forecast
 CALIFORNIA TOTAL VEHICLES

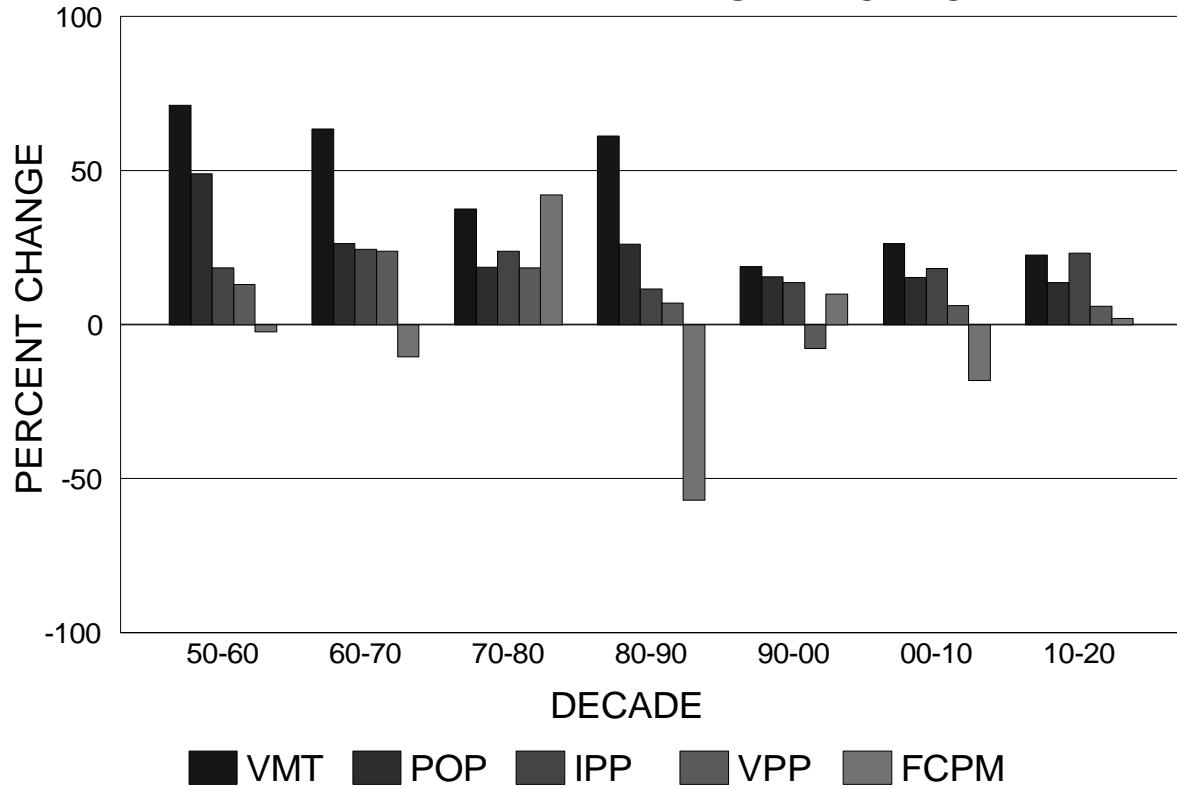


CALIFORNIA TOTAL VEHICLES, VMT, FUEL AND MPG FORECAST

YEAR	VEH	VMT	VFC	MPG	YEAR	VEH	VMT	VFC	MPG
1999	22.13	299.6	16.38	18.29	2010	28.03	387.1	20.53	18.85
2000	22.71	306.6	16.79	18.27	2011	28.55	394.7	20.91	18.88
2001	23.31	313.1	17.10	18.31	2012	29.08	402.4	21.30	18.89
2002	23.89	319.6	17.39	18.38	2013	29.62	410.2	21.70	18.91
2003	24.43	327.4	17.73	18.47	2014	30.16	418.1	22.11	18.92
2004	24.96	336.7	18.16	18.54	2015	30.79	427.3	22.58	18.93
2005	25.44	345.8	18.55	18.65	2016	31.44	436.5	23.06	18.93
2006	25.88	353.7	18.91	18.71	2017	32.09	445.9	23.55	18.93
2007	26.38	362.0	19.30	18.76	2018	32.75	455.4	24.05	18.94
2008	26.90	370.3	19.70	18.80	2019	33.41	465.0	24.55	18.94
2009	27.45	378.7	20.11	18.83	2020	34.08	474.7	25.05	18.95

Figure-S2

PERCENT CHANGE BY DECADE IN ANNUAL VMT AND THE MAIN VARIABLES AFFECTING IT



VMT: Vehicle Miles of Travel

POP: Population

IPP: Total Personal Income Per Person (67\$)

VPP: Vehicle Per Person

FCPM: Fuel Cost Per Mile (67\$)

Figure-S3
CALIFORNIA TOTAL VEHICLE MILES OF TRAVEL (1965 - 2020)

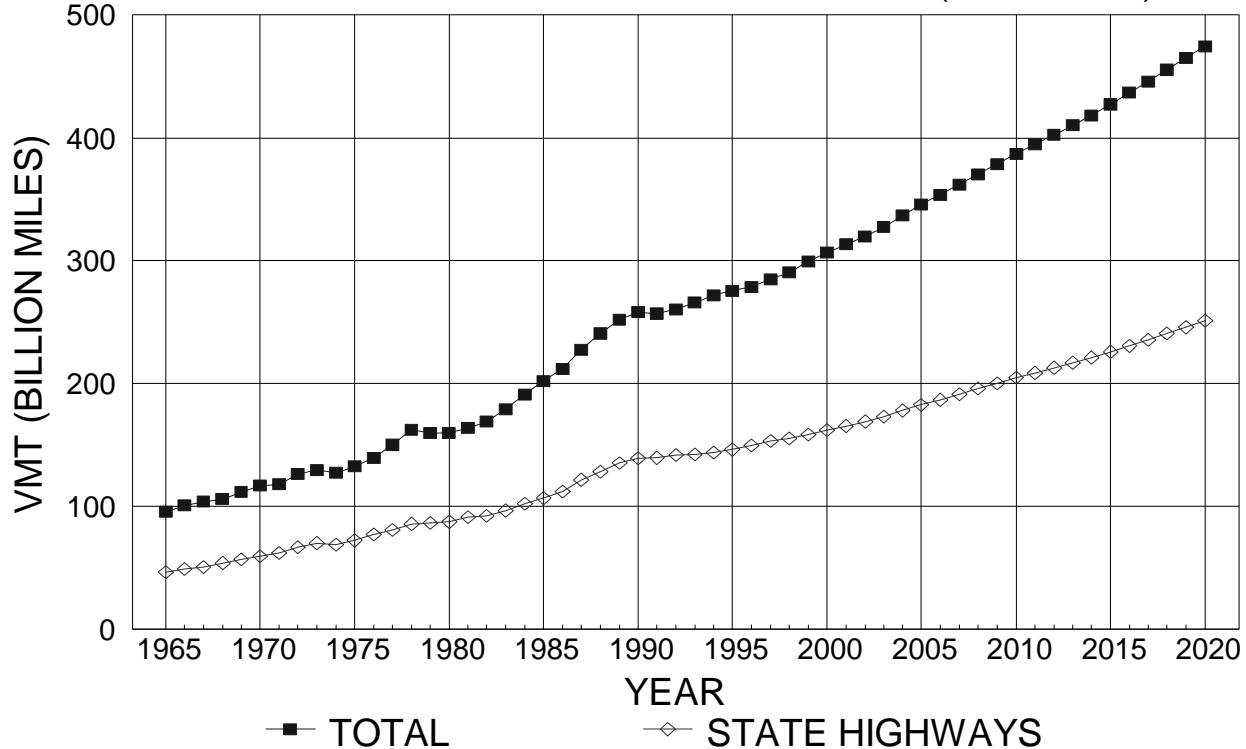
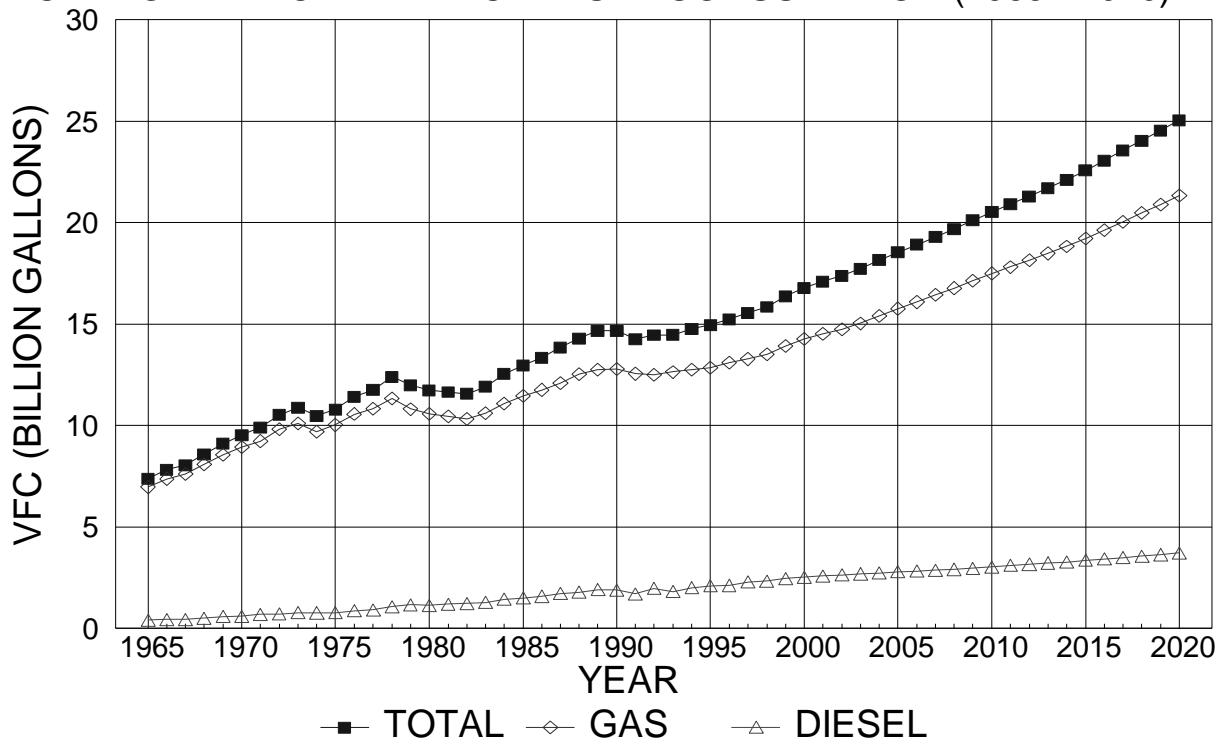


Figure-S4
CALIFORNIA TOTAL VEHICLE FUEL CONSUMPTION (1965 - 2020)



II. INTRODUCTION

The California Department of Transportation utilizes estimates and forecasts of statewide vehicle miles of travel (VMT) and vehicle fuel consumption (VFC) for a number of planning and reporting purposes. For example, estimates of VMT are needed annually for the FHWA-mandated Highway Performance Monitoring System (HPMS) program, and as input to the California Highway Patrol annual reporting system. Intermediate and long-term forecasts of VMT and VFC are used for system planning, projections of revenues from excise taxes on fuels, and air quality and energy conservation programs. To ensure that the forecasts are produced with appropriate, consistent and state-of-the-art methodologies, the Transportation System Information Program has developed the California Motor Vehicle Stock, Travel and Fuel Forecast (MVSTAFF) process which it updates on a continuous basis. The results of applying the process are reported in the MVSTAFF Report, which has been published annually since 1984, except for 1990.

The forecasts are based on socioeconomic data developed by the Office of Travel Forecasting and Analysis of the Transportation System Information Program using the latest California Department of Finance population projections (Ref. 4 & 5) and economic projections from the WEFA Group (Ref. 7) and the UCLA Anderson Forecast (Ref.3). These forecasts are primarily intended for use at the statewide level. However, the statewide total VMT forecasts have been allocated down to the county level in response to numerous requests for data at a substate level for transportation and air quality modeling and analysis.

The remaining sections of the report follow the outline listed below:

- An overview of the MVSTAFF process.
- A brief description of the socioeconomic projections which drive the forecasting process.
- A brief description of the forecast results.
- An appendix gives the county VMT (Appendix B) and VFC (Appendix C) distribution based on statewide forecasts. The statewide VMTs are distributed to the 58 counties by State Highways and all "Other" public roads and the statewide VFCs are distributed to the 58 counties by gasoline fuel and diesel fuel.

III. MVSTAFF PROCESS OVERVIEW

The MVSTAFF process is a recursive procedure, which estimates, for each year of the forecast period, the following:

- The motor vehicle stock (average number of currently registered vehicles) by six body types, two fuel types, and 25 model years or age groups.
- The fuel economy of the total fleet and each model year fleet.
- The vehicle travel and fuel consumption for the total fleet and each model year fleet.

The process consists of four major parts, which are outlined in Figure-1 and briefly described below.

1. Inventories

- Base year estimates and future year projections of the socioeconomic variables which are assumed to be the causative factors for acquiring vehicles and generating travel; base year fuel consumption; and explicit assumptions about new vehicle fuel economy.
- The base year vehicle stock stratified by vehicle type and model year, and derived estimates of the on-road fuel economy of each stratum of vehicles in the base year fleet.

2. The Stratified Rate Model

- When applied to the base year inventory, this model estimates base year vehicle travel, fuel consumption and fuel economy for each vehicle type and the total fleet.
- When applied in the forecasting mode, the Stratified Rate Model first updates the composition and fuel economy of the fleet by one year and then estimates the next year's stratified fleet, vehicle travel, fuel consumption and fuel economy.
- Imbedded in the Stratified Rate Model are submodels which forecast the total number of vehicles by vehicle type, new vehicles, in-migration vehicles, and scrappage of old vehicles and the fuel economy of new vehicles under explicit socioeconomic assumptions.

3. The Statewide Aggregate VMT and VFC Model

- This model accepts the vehicle fleet fuel economy from the Stratified Rate Model and socioeconomic data from the inventory. It estimates next year's statewide total VMT and VFC without regard to vehicle body type. Because the Aggregate Model is more directly linked to socioeconomic variables, the VMT forecasts from the model are used as control totals for the forecast years.

4. A Comparison/Adjustment Model

- This model compares and adjusts the total VMT and VFC from the Stratified Rate Model to match that from the Aggregate Model. As part of the comparison/adjustment process, statewide total diesel fuel is forecasted with a Diesel Fuel Consumption Model, and gasoline fuel is computed as the difference between total fuel and diesel fuel. Following the comparison/adjustment step, future year VMT, VFC, and vehicle fuel economy (VFE) for each vehicle type are then calculated.

The above sequence produces the "next year" forecast. The process is then recursively applied to produce forecasts for each succeeding year in the forecast period.

Statewide VMT from the above process is distributed to the 58 counties and two major road systems (State Highways and all "Other" public roads) as follows:

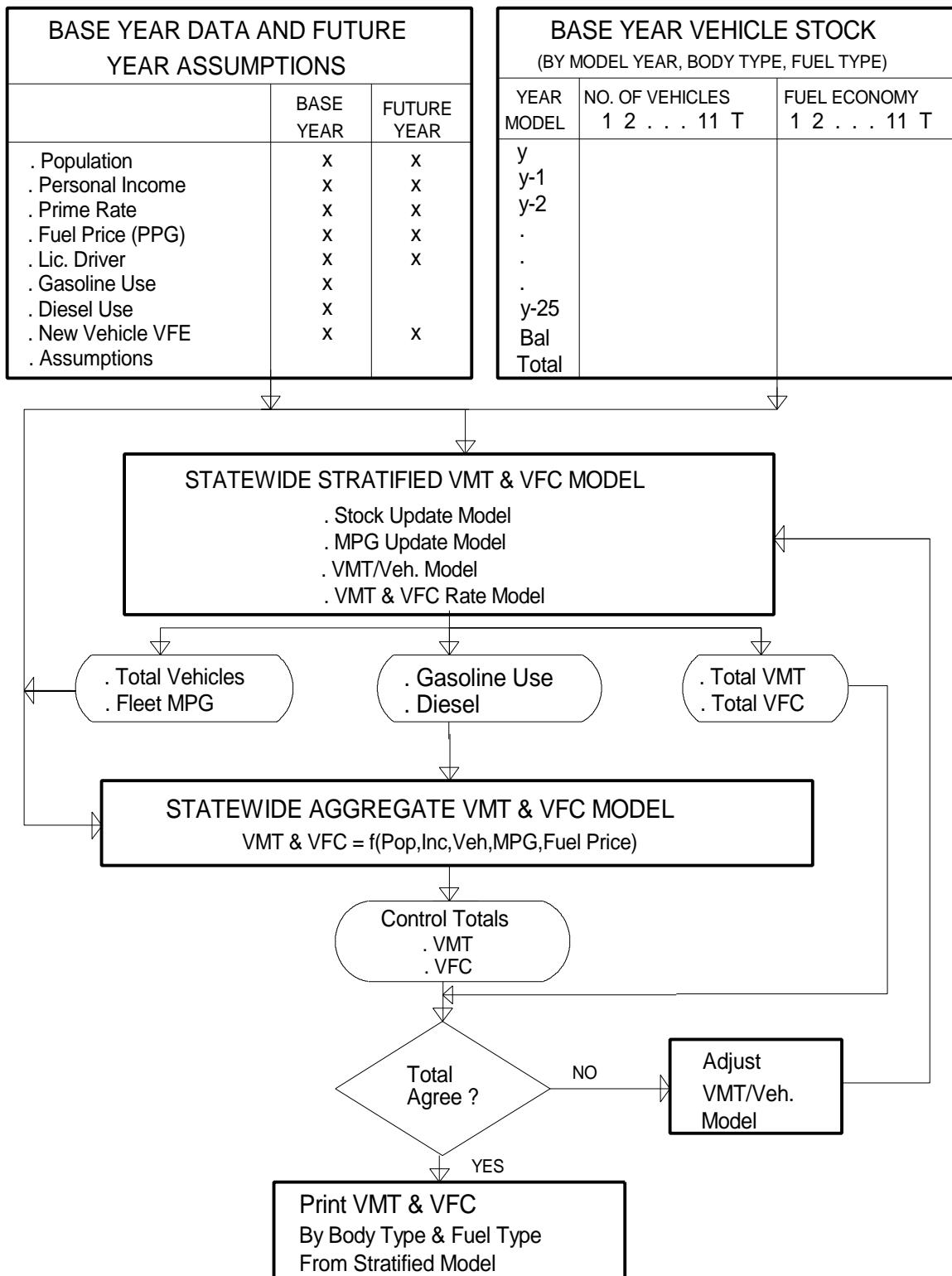
For the base year, county VMT on state highways is obtained directly from the Traffic Operations Program's annual Traffic Accident Surveillance and Analysis System (TASAS) file. County VMT on all other public roads, except that on the local road functional class, is estimated from the annual Highway Performance Monitoring System (HPMS) file. Local road VMT cannot be obtained from either TASAS or HPMS. Therefore, statewide local road VMT is calculated as the difference: statewide total VMT (MVSTAFF) minus state highway VMT (TASAS) and other road VMT (HPMS). Statewide local road VMT is then allocated to each county on the basis of the relative distribution of the quantity, "county automobile registrations times the proportion of local road mileage to the total system mileage".

For future years, the statewide VMT from MVSTAFF is distributed by applying county-specific, annualized growth rates to the base year county estimates described above. The county-specific growth rates are calculated from county population estimates recently published by the Department of Finance. The annualized rates are normalized so that the sum of counties' VMT equals the MVSTAFF statewide VMT.

Statewide VFC is distributed to the 58 counties and the two fuel types, gasoline and diesel, using estimates of county VMT, truck VMT and statewide estimates of vehicle fuel economy.

Figure-1

MOTOR VEHICLE STOCK, TRAVEL AND FUEL FORECASTING PROCESS



IV. FORECAST ASSUMPTIONS

As discussed in the previous section and shown in Figure-1, the MVSTAFF process requires base year estimates and future year projections of a number of socioeconomic variables; and explicit assumptions regarding the fuel economy of the vehicle fleet, by vehicle type. The assumptions made regarding the key variables, that drive the forecasting process, are briefly described below.

A. SOCIOECONOMIC ASSUMPTIONS

Base year (1999) estimates of population and the economic variables were obtained from the California Department of Finance (DOF), the state's official source of such information. Future year population was also obtained from DOF. The Transportation System Information Program developed projections of the economic variables based on the information in the WEFA Group, "U.S. Long-Term Economic Outlook, 3rd Quarter 2000" (Ref. 7) and the "UCLA Anderson Forecast, September 2000" (Ref. 3). The WEFA Group projections represent a "trend/moderate growth" scenario. The MVSTAFF forecasts, therefore, reflect the same scenario imposed on the DOF population projections and the existing legislation regarding current and future taxes on fuel.

The resulting projections, which were used in the forecast, are shown graphically and in tabular form in Figures 2 to 7. A brief discussion of each variable is given below.

1. Population

Population projections used for the years 1999-2020 were the latest data available from DOF (Ref. 4 & 5). These projections are shown in Figure-2. As can be seen, the state's population is projected to continue to increase. The rate increases to a high of 1.71 percent in 2000 and then continues to fall to a low of 1.11 percent in 2011. The rate of increase goes up slightly after 2011.

2. Inflation Assumptions: The U.S. Consumer Price Index

Projections of total personal income and motor vehicle fuel prices are normally made on a current dollar basis. Because the MVSTAFF process operates on a constant dollar basis, these need to be adjusted for inflation by dividing them by projections of the U.S. Consumer Price Index (U.S. CPI). The projections of the U.S. CPI to 2020 are shown in Figure-3.

It can be seen from Figure-3 that the CPI is projected to increase at an average rate of 2.59 percent per year throughout the forecast period.

3. Total Personal Income Per Person

Statewide total personal income per person (IPP) is an important variable in a number of forecasting models used in the MVSTAFF process. For example, it is a major

determinant of new car sales, vehicle ownership and annual miles of travel per person. The 1999 base year income per person was from the California Department of Finance, and the annual percentage growth rates for the future years were derived from the WEFA U.S. Long-Term Economic Outlook, 3rd Quarter 2000 (Ref. 7).

The forecast of statewide total personal income (TPI), in 1967 dollars, is shown in Figure-4, and the forecast of total personal income per person in Figure-5. As can be seen, total personal income, and total personal income per person are expected to increase 4.06 percent and 2.32 percent, respectively, in 2000. Total personal income is projected to increase at an annual average rate of 3.32 percent for the forecast period. The income per person growth rates follow a similar pattern but at a lower rate which average to an annual rate of about 1.92 percent.

4. Fuel Price

Fuel price is one of the most important variables in projecting future vehicle miles of travel and fuel consumption. This is because: (a) it directly and significantly determines the amount of vehicular travel, as shown in the development of the Statewide Aggregate VMT and VFC Model (Ref. 1); (b) over the past twenty years it has had the greatest variability of any of the socioeconomic variables used to forecast VMT and VFC; and (c) it influences the fuel economy of the new vehicle fleet which directly impacts fuel consumption.

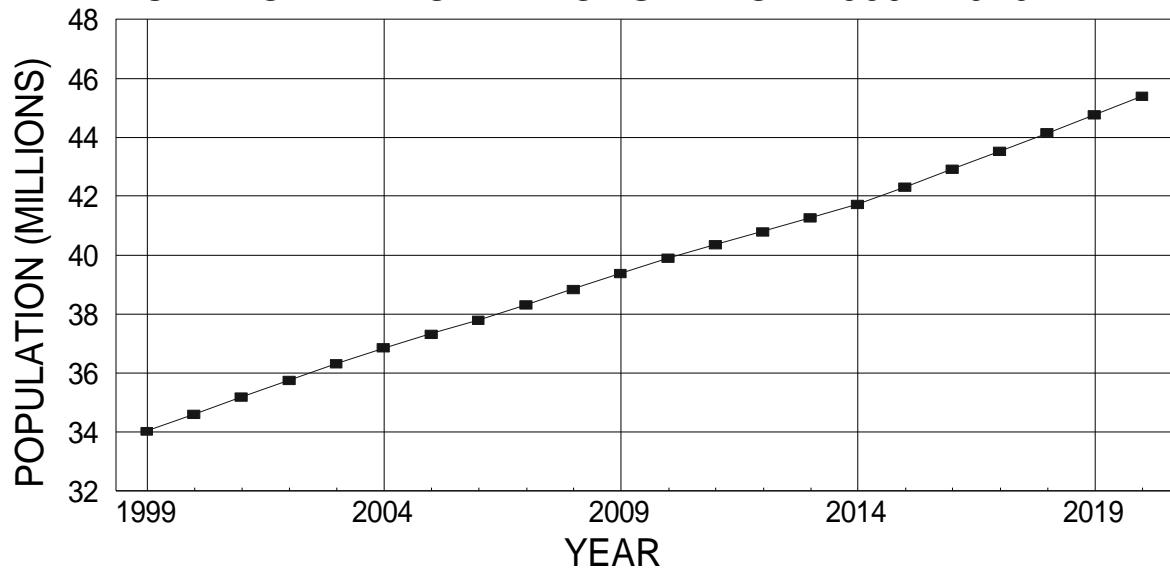
The fuel price variable used in the forecasting process is the price of gasoline, averaged over all grades, and full service and self service sales. The price includes all excise taxes but not sales taxes. Projected gasoline prices in constant 1967 dollars are given in Figure-6. They were estimated using the WEFA long-term gasoline price forecast.

Figure-6 shows the projected fuel prices in constant (1967) dollars. Fuel price is expected to continue to fall from year 2000 to 2010 and then be steady throughout the forecast period.

5. Prime Lending Rate

The prime lending rate is one of the variables used to estimate new vehicle sales, which is needed to annually update the vehicle fleet. The prime commercial bank rates for this year's forecast are given in Figure-7. The rate is very steady but decreasing. It drops from the high of 9.75% in 2001 to the low of 7.72% in 2020. The difference is only 2.0% in 21 years.

Figure-2
CALIFORNIA TOTAL POPULATION 1999 - 2020

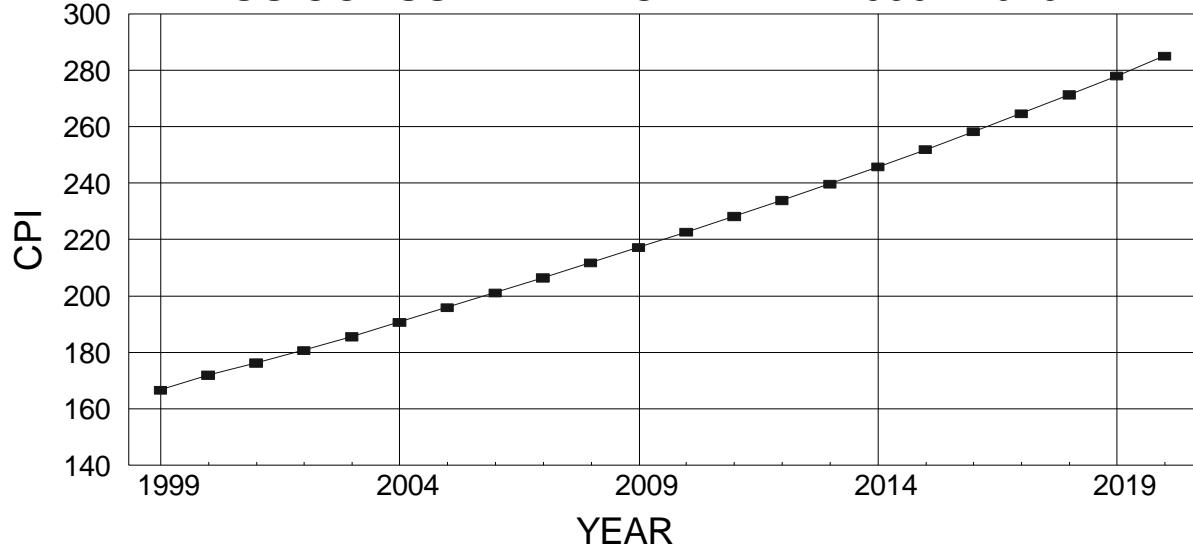


CALIFORNIA TOTAL POPULATION 1999-2020

Year	Population	%-CH
1999	34.036	
2000	34.616	1.705
2001	35.196	1.674
2002	35.764	1.615
2003	36.325	1.568
2004	36.860	1.475
2005	37.332	1.281
2006	37.798	1.247
2007	38.323	1.390
2008	38.852	1.380
2009	39.384	1.368
2010	39.915	1.349
2011	40.359	1.113
2012	40.809	1.114
2013	41.270	1.130
2014	41.740	1.139
2015	42.326	1.403
2016	42.926	1.419
2017	43.536	1.420
2018	44.154	1.419
2019	44.776	1.410
2020	45.400	1.393

Population in Millions

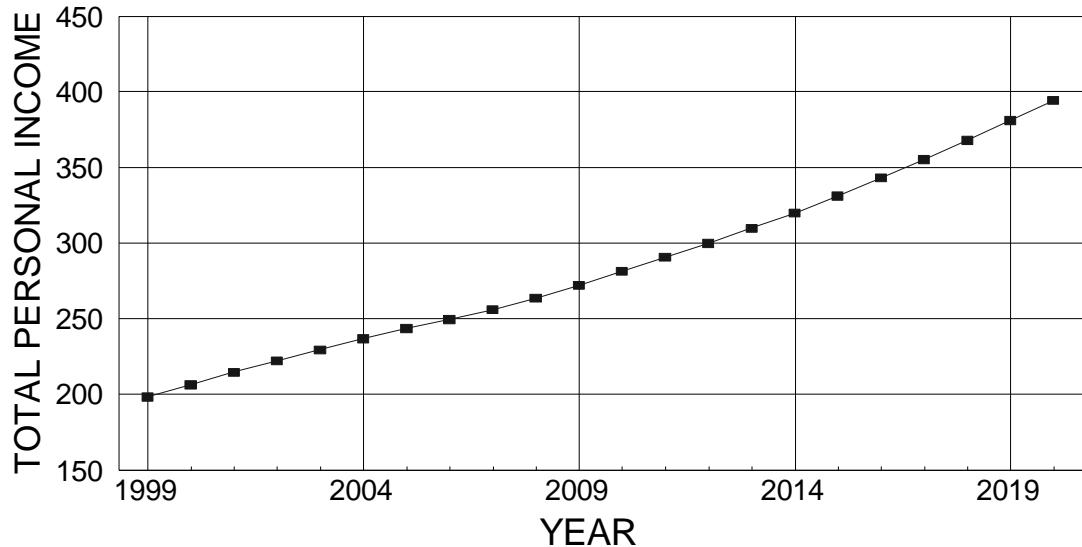
Figure-3
US CONSUMER PRICE INDEX 1999 - 2020



U.S. CONSUMER PRICE INDEX, 1982-1984=100

Year	CPI	%-CH
1999	166.700	
2000	172.100	3.239
2001	176.400	2.499
2002	180.800	2.494
2003	185.600	2.655
2004	190.800	2.802
2005	196.000	2.725
2006	201.200	2.653
2007	206.500	2.634
2008	211.900	2.615
2009	217.300	2.548
2010	222.700	2.485
2011	228.300	2.515
2012	234.000	2.497
2013	239.800	2.479
2014	245.800	2.502
2015	252.000	2.522
2016	258.300	2.500
2017	264.700	2.478
2018	271.400	2.531
2019	278.100	2.469
2020	285.100	2.517

Figure-4
CALIFORNIA TOTAL PERSONAL INCOME IN 1967 DOLLARS

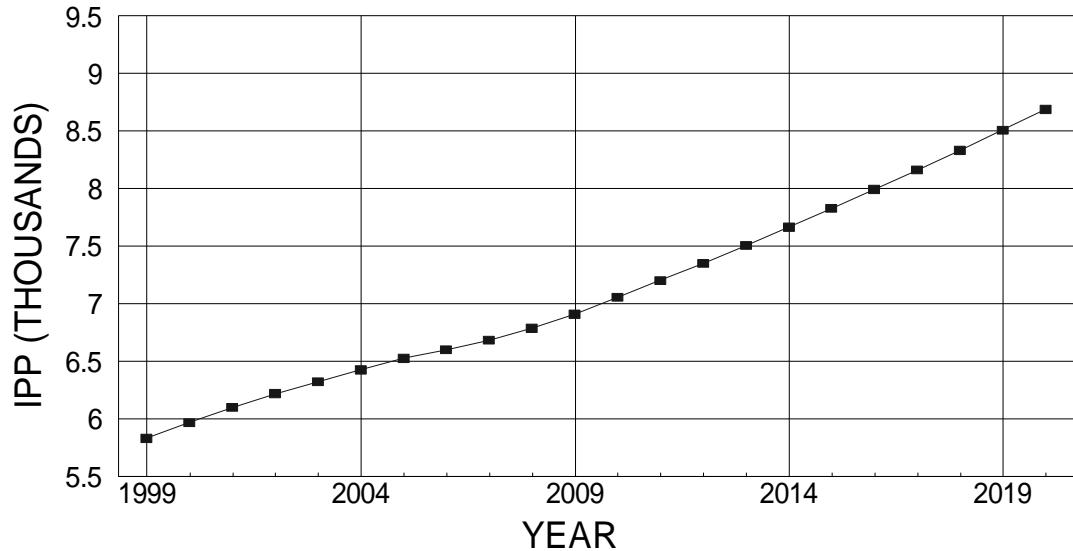


CALIFORNIA TOTAL PERSONAL INCOME

Year	TPI	%-CH
1999	198.470	
2000	206.533	4.063
2001	214.712	3.960
2002	222.380	3.571
2003	229.639	3.264
2004	236.864	3.146
2005	243.592	2.840
2006	249.458	2.408
2007	256.150	2.683
2008	263.663	2.933
2009	272.169	3.226
2010	281.585	3.459
2011	290.666	3.225
2012	300.055	3.230
2013	309.844	3.262
2014	319.995	3.276
2015	331.383	3.559
2016	343.163	3.555
2017	355.366	3.556
2018	367.999	3.555
2019	381.048	3.546
2020	394.491	3.528

TPI in Billions (67\$)

Figure-5
CALIFORNIA PERSONAL INCOME PER PERSON IN 1967 DOLLARS

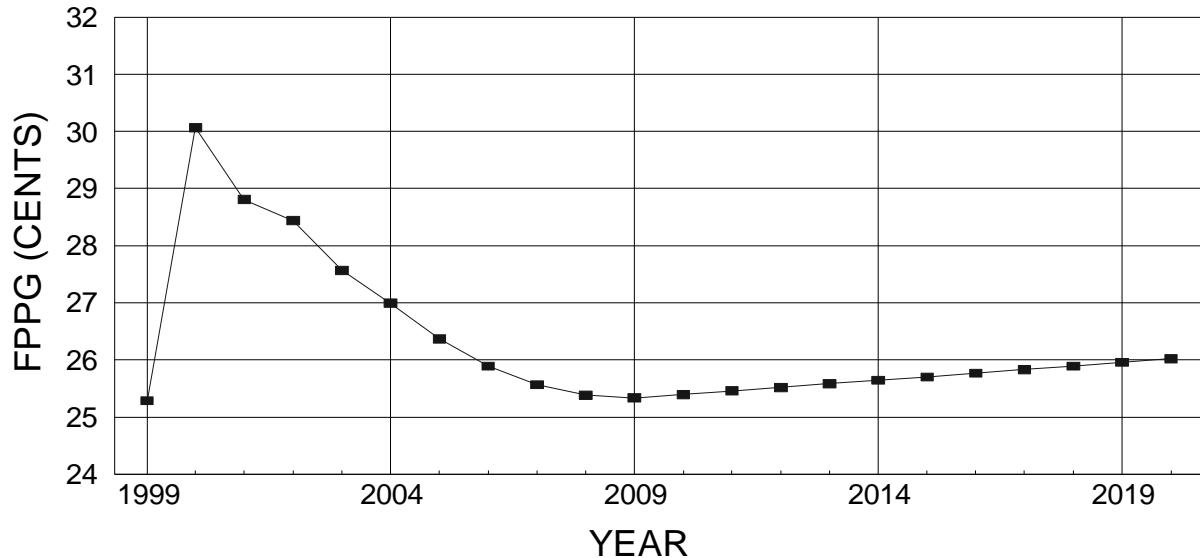


CALIFORNIA PERSONAL INCOME PER PERSON

Year	IPP	%-CH
1999	5.831	
2000	5.966	2.318
2001	6.101	2.249
2002	6.218	1.925
2003	6.322	1.670
2004	6.426	1.647
2005	6.525	1.540
2006	6.600	1.147
2007	6.684	1.275
2008	6.786	1.532
2009	6.911	1.833
2010	7.055	2.083
2011	7.202	2.089
2012	7.353	2.093
2013	7.508	2.108
2014	7.666	2.113
2015	7.829	2.127
2016	7.994	2.106
2017	8.163	2.106
2018	8.335	2.106
2019	8.510	2.106
2020	8.689	2.106

IPP in Thousands (67\$)

Figure-6
GASOLINE PRICE PER GALLON IN 1967 DOLLARS

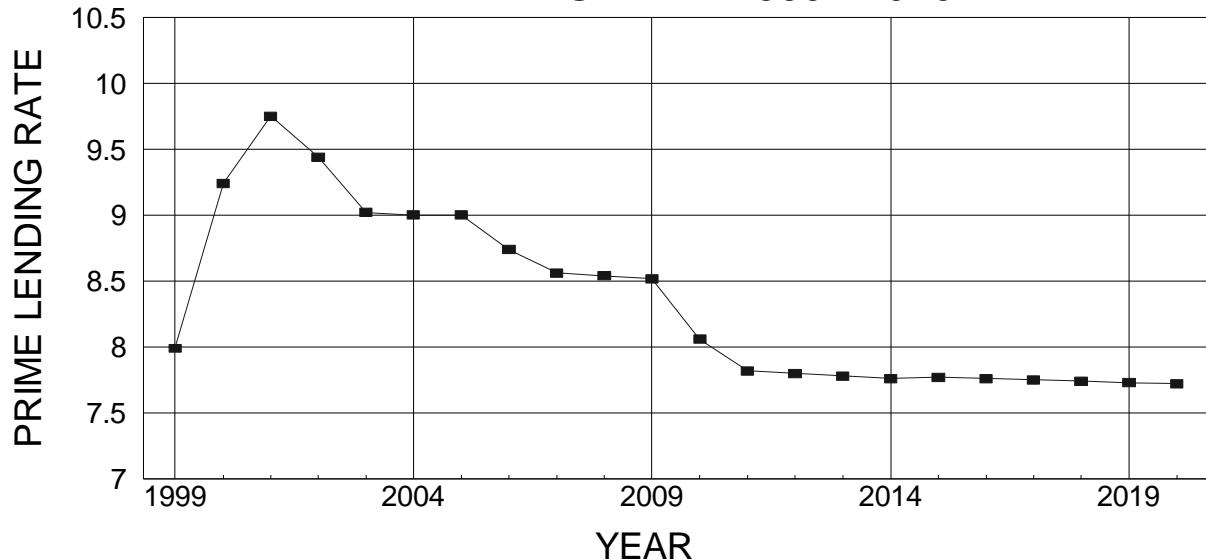


GASOLINE PRICE PER GALLON IN 1967 DOLLARS

Year	Price	%-CH
1999	25.286	
2000	30.068	18.912
2001	28.807	-4.194
2002	28.439	-1.277
2003	27.569	-3.059
2004	26.992	-2.093
2005	26.367	-2.316
2006	25.893	-1.798
2007	25.568	-1.255
2008	25.384	-0.720
2009	25.335	-0.193
2010	25.396	0.241
2011	25.459	0.248
2012	25.520	0.240
2013	25.582	0.243
2014	25.643	0.238
2015	25.704	0.238
2016	25.767	0.245
2017	25.831	0.248
2018	25.894	0.244
2019	25.958	0.247
2020	26.021	0.243

Price in Cents (67\$)

Figure-7
PRIME LENDING RATE 1999 - 2020



PRIME LENDING RATE 1999-2020

Year	Prime	%-CH
1999	7.990	
2000	9.240	15.645
2001	9.750	5.519
2002	9.440	-3.179
2003	9.020	-4.449
2004	9.000	-0.222
2005	9.000	0.000
2006	8.740	-2.889
2007	8.560	-2.059
2008	8.540	-0.234
2009	8.520	-0.234
2010	8.060	-5.399
2011	7.820	-2.978
2012	7.800	-0.256
2013	7.780	-0.256
2014	7.760	-0.257
2015	7.770	0.129
2016	7.760	-0.129
2017	7.750	-0.129
2018	7.740	-0.129
2019	7.730	-0.129
2020	7.720	-0.129

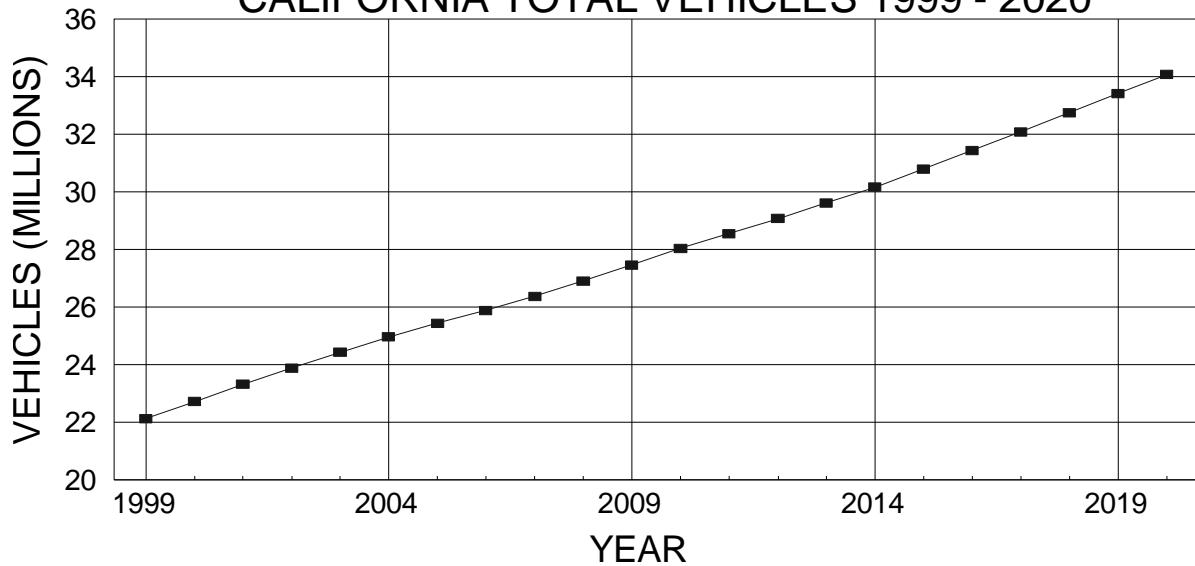
B. NEW VEHICLE FUEL ECONOMY

The MVSTAFF process requires explicit assumptions of the fuel economy of new vehicles entering the fleet each year. The recent update of the MPG model using the 1994 to 1999 Department of Motor Vehicles' vehicle population profile for California, and the EPA Gas Mileage Guides showed that the light duty vehicle fleets (autos and trucks of gross vehicle weight less than 10,000 pounds) meet the national Corporate Average Fuel Economy (CAFE) standards. Because of the fact that the CAFE standard has not been changed, it was assumed the new light duty fleets would continue to have the same fuel economy into the future.

For the medium truck fleets (gross vehicle weight from 10,001 to 33,000 lbs.) and heavy-duty truck fleets (gross vehicle weight greater than 33,000 lbs.), it was reasoned that the manufacturers and buyers are aware of the significance of the fuel operating cost to the trucking industry and that the long-term outlook is for higher fuel prices. Hence, there will be a continuous need and effort to improve truck fuel economy so that in the long run, fuel operating costs will not increase beyond current levels. Using the vehicle fuel economy values from the 1977, 1982, 1987, 1992 Truck Inventory and Use Survey (TIUS) Reports (Ref. 6) and the 1997 Vehicle Inventory and Use Survey (VIUS) Report (Ref. 8) an average annual fleet MPG improvement was calculated for each vehicle and fuel type. These rates of improvement were assumed to continue in the future.

Fuel economy of motorcycles was assumed to be a constant on-road value of 50.0 miles per gallon.

Figure-8
CALIFORNIA TOTAL VEHICLES 1999 - 2020



CALIFORNIA TOTAL VEHICLES 1999-2020

Year	Vehicles	%-CH
1999	22.126	
2000	22.713	2.653
2001	23.314	2.646
2002	23.886	2.453
2003	24.432	2.286
2004	24.962	2.169
2005	25.441	1.919
2006	25.881	1.729
2007	26.376	1.913
2008	26.899	1.983
2009	27.453	2.060
2010	28.032	2.109
2011	28.553	1.859
2012	29.079	1.842
2013	29.616	1.847
2014	30.161	1.840
2015	30.792	2.092
2016	31.435	2.088
2017	32.087	2.074
2018	32.747	2.057
2019	33.413	2.034
2020	34.082	2.002

Vehicles in Millions

V. FORECAST RESULTS

A. Motor Vehicle Stock

The total vehicle figures used in this report are the average number of currently registered motor vehicles in operation in each calendar year. The estimates of the base year and the forecast years are provided in Figure-8. Values in the figure represent all vehicle body types (autos, trucks and motorcycles) and fuel types (gasoline and diesel).

Total vehicles are expected to increase by 2.7% in 2000. However, the long-term forecast is for vehicles to continue to increase, but at declining rates, as population growth slows down and vehicle ownership reaches saturation levels.

Total vehicles were stratified into body type, fuel type, and model year categories with the vehicle stock update model. Table-1 gives the forecasted number of vehicles in each body type and fuel type category for the years 1999 to 2013, 2015 and 2020.

Figure-9 graphically shows the estimates of total gasoline plus diesel vehicles, by body type, for the years 1999 to 2020. The plots correspond to the data given in the upper part of Table-1. Although motorcycles are not shown as a separate entry in the figure, they are included in the "Total" graph.

TABLE-1: CALIFORNIA TOTAL VEHICLES (MILLIONS)

VEH. TYPE	CAL. YEAR	AUTOS	BODY TYPE				M.C.	TOTAL
			TRK1	TRK2	TRK3	TRK4		
T O T A L	1999	16.046	3.299	1.910	0.362	0.125	0.384	22.126
	2000	16.461	3.396	1.966	0.370	0.127	0.394	22.713
	2001	16.895	3.497	2.024	0.377	0.130	0.391	23.314
	2002	17.308	3.592	2.079	0.385	0.132	0.390	23.886
	2003	17.703	3.682	2.131	0.392	0.135	0.389	24.432
	2004	18.087	3.770	2.182	0.399	0.137	0.388	24.962
	2005	18.435	3.849	2.228	0.405	0.139	0.386	25.441
	2006	18.754	3.922	2.270	0.410	0.141	0.385	25.881
	2007	19.113	4.002	2.316	0.417	0.143	0.385	26.376
	2008	19.493	4.087	2.365	0.424	0.145	0.384	26.899
	2009	19.897	4.176	2.417	0.432	0.148	0.384	27.453
	2010	20.320	4.268	2.470	0.440	0.150	0.384	28.032
	2011	20.699	4.351	2.519	0.447	0.153	0.384	28.553
	2012	21.083	4.435	2.567	0.454	0.155	0.384	29.079
G A S O L I N E	2013	21.475	4.520	2.616	0.462	0.157	0.385	29.616
	2015	22.336	4.706	2.724	0.479	0.163	0.385	30.792
	2020	24.745	5.223	3.023	0.527	0.179	0.386	34.082
	1999	15.892	3.280	1.756	0.147	0.001	0.384	21.460
	2000	16.320	3.379	1.806	0.146	0.001	0.394	22.046
	2001	16.766	3.481	1.858	0.146	0.001	0.391	22.644
	2002	17.190	3.577	1.908	0.147	0.001	0.390	23.213
	2003	17.595	3.669	1.956	0.147	0.001	0.389	23.758
	2004	17.989	3.758	2.003	0.147	0.001	0.388	24.286
	2005	18.345	3.838	2.045	0.147	0.001	0.386	24.764
	2006	18.672	3.912	2.085	0.148	0.001	0.385	25.203
	2007	19.038	3.994	2.128	0.149	0.001	0.385	25.694
	2008	19.423	4.079	2.174	0.150	0.001	0.384	26.212
	2009	19.832	4.169	2.221	0.152	0.001	0.384	26.759
	2010	20.258	4.262	2.271	0.154	0.001	0.384	27.330
	2011	20.641	4.346	2.316	0.155	0.001	0.384	27.844
	2012	21.027	4.430	2.361	0.157	0.001	0.384	28.362
	2013	21.422	4.516	2.406	0.159	0.001	0.385	28.890
	2015	22.284	4.703	2.506	0.164	0.001	0.385	30.044
	2020	24.696	5.221	2.781	0.180	0.002	0.386	33.264
D I E S E L R	1999	0.155	0.020	0.154	0.215	0.123	0.000	0.667
	2000	0.141	0.018	0.160	0.223	0.126	0.000	0.667
	2001	0.129	0.016	0.165	0.231	0.129	0.000	0.670
	2002	0.118	0.015	0.170	0.238	0.131	0.000	0.672
	2003	0.108	0.013	0.175	0.245	0.133	0.000	0.674
	2004	0.098	0.012	0.179	0.252	0.136	0.000	0.676
	2005	0.090	0.011	0.182	0.257	0.138	0.000	0.678
	2006	0.082	0.009	0.185	0.263	0.139	0.000	0.679
	2007	0.075	0.008	0.188	0.268	0.142	0.000	0.682
	2008	0.070	0.008	0.192	0.274	0.144	0.000	0.687
	2009	0.065	0.007	0.195	0.280	0.146	0.000	0.694
	2010	0.062	0.006	0.199	0.286	0.149	0.000	0.702
	2011	0.059	0.005	0.203	0.292	0.151	0.000	0.709
	2012	0.056	0.005	0.206	0.297	0.154	0.000	0.718
	2013	0.054	0.004	0.210	0.302	0.156	0.000	0.727
	2015	0.051	0.003	0.218	0.314	0.161	0.000	0.749
	2020	0.050	0.002	0.242	0.347	0.177	0.000	0.818

Figure-9
CALIFORNIA TOTAL VEHICLES BY BODY TYPE

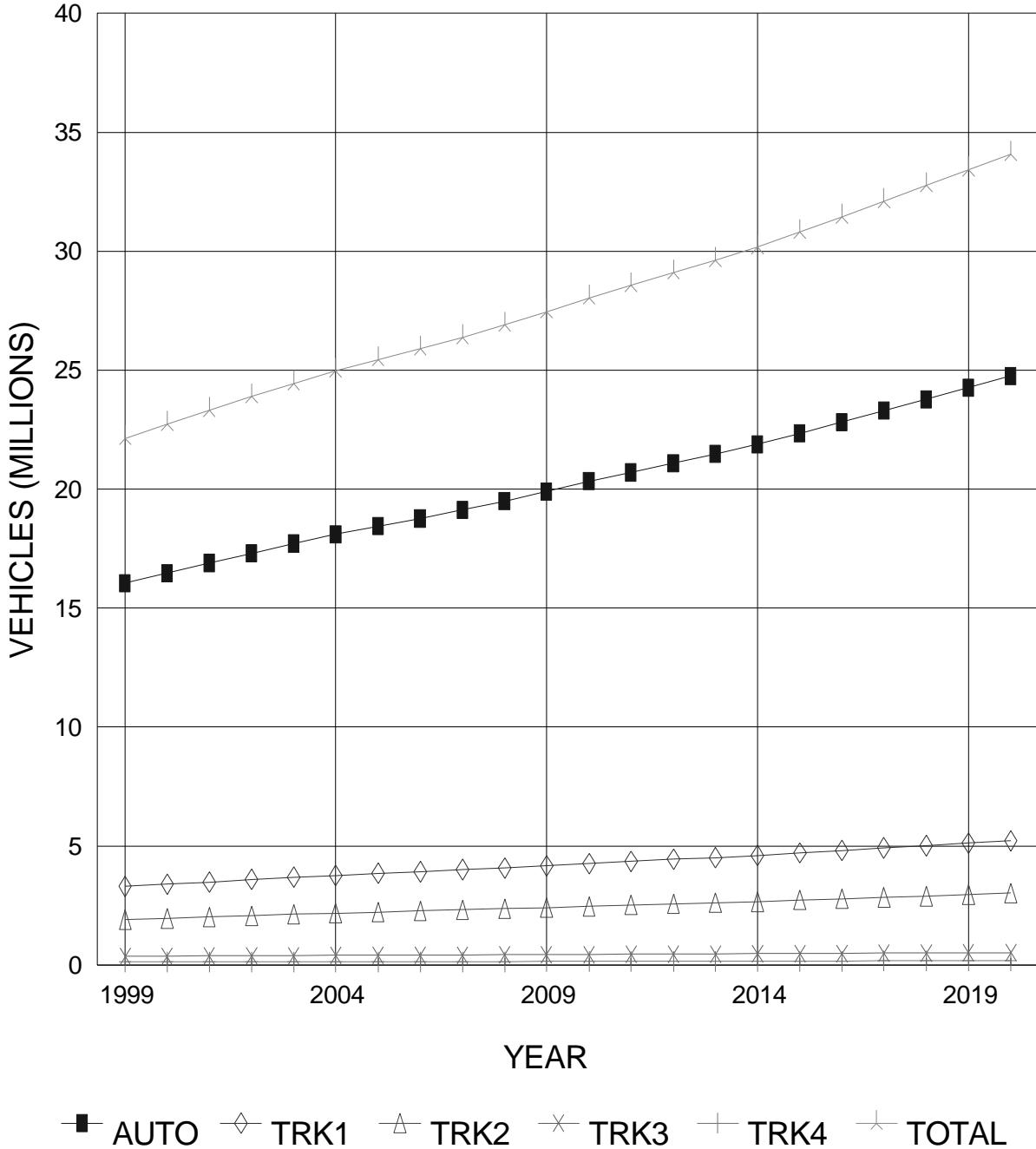
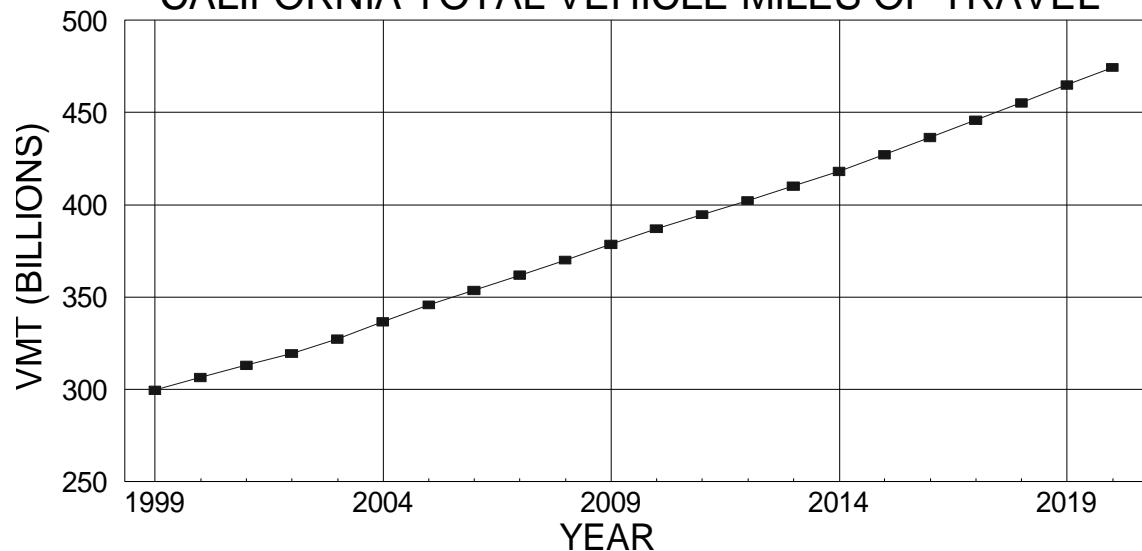


Figure-10
CALIFORNIA TOTAL VEHICLE MILES OF TRAVEL



CALIFORNIA TOTAL VEHICLE MILES OF TRAVEL

Year	VMT	%-CH
1999	299.577	
2000	306.598	2.344
2001	313.112	2.125
2002	319.631	2.082
2003	327.406	2.432
2004	336.742	2.852
2005	345.776	2.683
2006	353.691	2.289
2007	361.955	2.337
2008	370.274	2.298
2009	378.667	2.267
2010	387.097	2.226
2011	394.711	1.967
2012	402.405	1.949
2013	410.224	1.943
2014	418.149	1.932
2015	427.275	2.182
2016	436.544	2.169
2017	445.910	2.145
2018	455.443	2.138
2019	465.005	2.099
2020	474.650	2.074

VMT in Billion Miles

B. Vehicle Miles of Travel

Statewide total vehicle miles of travel projected by the forecast are given in Figure-10. The values in the figure represent travel by all vehicle body types and fuel types on all public roads.

The 1999 vehicle miles of travel (VMT) estimate of 299.577 is based on the 1999 on-road fuel consumption estimate from the Board of Equalization's sales data, and the 1999 on-road vehicle fleet fuel economy from the MVSTAFF Stratified Rate Model. Annual statewide VMT is expected to increase 2.3 percent in 2000 and 2.1 percent in 2001. The long-term forecast is for VMT to continue to grow, but at significantly lower rates than it has in the past. The slow down is predicated on lower statewide population and economic growth. For air quality conformity analysis purposes the annual VMT in 5-year increments from 1990 are listed in Table-1.1.

Forecasts of statewide total VMT stratified by six body types and two fuel types are given in Table-2. Graphs of VMT by body type are given in Figure-11. The graphs correspond to the data in the upper part of Table-2. Although VMT by motorcycles is not shown as a separate entry in the figure, it is included in the "Total VMT" graph.

Table-1.1

Total Statewide VMT and Five-year Percent Change

YEAR	VMT	%-CH
1990	259.003	
1995	276.968	6.936
2000	306.598	10.698
2005	345.776	12.778
2010	387.097	11.950
2015	427.275	10.379
2020	474.650	11.088

VMT in Billion Miles

Table-2 CALIFORNIA TOTAL VEHICLE MILES OF TRAVEL (BILLIONS)

VEH. TYPE	CAL. YEAR	AUTOS	BODY TYPE				M.C.	TOTAL
			TRK1	TRK2	TRK3	TRK4		
T O T A L	1999	214.696	42.402	24.792	9.093	7.749	0.845	299.577
	2000	219.030	43.180	26.080	9.367	8.077	0.866	306.598
	2001	223.035	44.094	27.135	9.622	8.365	0.861	313.112
	2002	227.243	44.924	28.115	9.855	8.635	0.859	319.631
	2003	232.472	45.921	29.209	10.062	8.887	0.855	327.406
	2004	238.820	47.237	30.449	10.255	9.128	0.853	336.742
	2005	244.998	48.541	31.612	10.427	9.348	0.850	345.776
	2006	250.400	49.711	32.615	10.575	9.542	0.848	353.691
	2007	256.070	50.940	33.589	10.750	9.761	0.846	361.955
	2008	261.785	52.183	34.518	10.945	9.997	0.845	370.274
	2009	267.559	53.432	35.408	11.168	10.255	0.845	378.667
	2010	273.363	54.685	36.264	11.410	10.530	0.845	387.097
	2011	278.580	55.841	37.035	11.625	10.784	0.846	394.711
	2012	283.861	57.015	37.796	11.843	11.044	0.846	402.405
G A S O L I N E	2013	289.248	58.199	38.547	12.073	11.311	0.846	410.224
	2015	301.101	60.733	40.134	12.588	11.872	0.847	427.275
	2020	334.432	67.470	44.413	14.122	13.364	0.848	474.650
	1999	213.169	42.267	22.609	1.779	0.010	0.845	280.678
	2000	217.694	43.074	23.820	1.831	0.012	0.866	287.296
	2001	221.847	44.007	24.820	1.882	0.014	0.861	293.431
	2002	226.181	44.855	25.750	1.930	0.015	0.859	299.590
	2003	231.512	45.868	26.784	1.972	0.017	0.855	307.007
	2004	237.942	47.195	27.947	2.012	0.019	0.853	315.968
	2005	244.189	48.509	29.037	2.049	0.021	0.850	324.654
	2006	249.648	49.687	29.976	2.082	0.022	0.848	332.262
	2007	255.363	50.921	30.883	2.122	0.024	0.846	340.158
	2008	261.112	52.167	31.746	2.165	0.025	0.845	348.060
	2009	266.910	53.419	32.570	2.214	0.027	0.845	355.983
	2010	272.731	54.672	33.360	2.268	0.028	0.845	363.905
	2011	277.962	55.830	34.072	2.317	0.029	0.846	371.056
	2012	283.253	57.005	34.772	2.366	0.031	0.846	378.273
	2013	288.647	58.190	35.463	2.418	0.032	0.846	385.596
	2015	300.502	60.725	36.924	2.531	0.034	0.847	401.563
	2020	333.804	67.465	40.860	2.853	0.039	0.848	445.869
D I E S E L	1999	1.527	0.135	2.183	7.314	7.739	0.000	18.899
	2000	1.337	0.106	2.260	7.535	8.065	0.000	19.302
	2001	1.188	0.087	2.314	7.740	8.352	0.000	19.681
	2002	1.062	0.069	2.364	7.925	8.620	0.000	20.041
	2003	0.960	0.054	2.426	8.090	8.869	0.000	20.399
	2004	0.878	0.042	2.502	8.243	9.109	0.000	20.774
	2005	0.809	0.032	2.575	8.378	9.328	0.000	21.122
	2006	0.751	0.025	2.640	8.492	9.520	0.000	21.428
	2007	0.707	0.019	2.706	8.628	9.737	0.000	21.798
	2008	0.673	0.016	2.772	8.780	9.972	0.000	22.214
	2009	0.649	0.014	2.838	8.954	10.228	0.000	22.684
	2010	0.632	0.012	2.904	9.142	10.502	0.000	23.192
	2011	0.618	0.011	2.964	9.308	10.755	0.000	23.655
	2012	0.608	0.010	3.024	9.477	11.013	0.000	24.131
	2013	0.602	0.009	3.083	9.655	11.279	0.000	24.628
	2015	0.599	0.007	3.210	10.058	11.838	0.000	25.712
	2020	0.628	0.005	3.553	11.269	13.325	0.000	28.781

Figure-11

CALIFORNIA VEHICLE MILES OF TRAVEL BY BODY TYPE

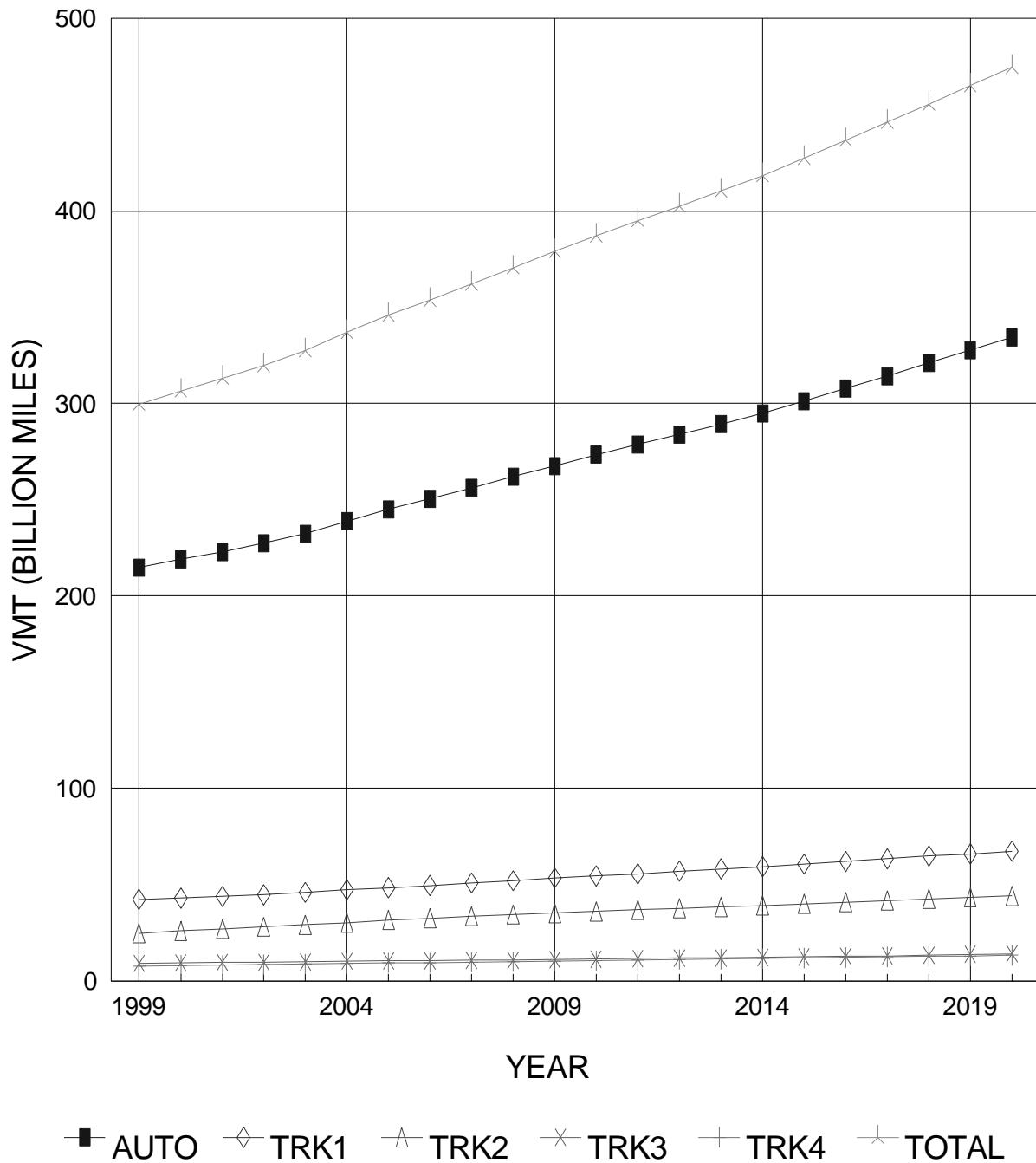
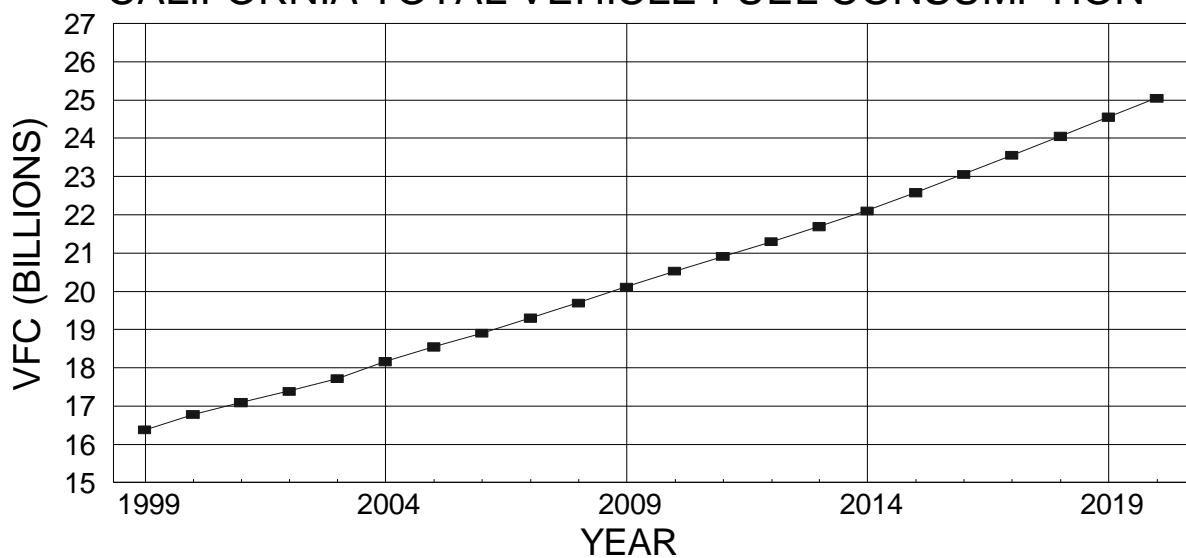


Figure-12
CALIFORNIA TOTAL VEHICLE FUEL CONSUMPTION



CALIFORNIA TOTAL VEHICLE FUEL CONSUMPTION

Year	VFC	%-CH
1999	16.382	
2000	16.786	2.466
2001	17.097	1.853
2002	17.390	1.714
2003	17.725	1.926
2004	18.163	2.471
2005	18.545	2.103
2006	18.905	1.941
2007	19.299	2.084
2008	19.700	2.078
2009	20.111	2.086
2010	20.533	2.098
2011	20.911	1.841
2012	21.298	1.851
2013	21.696	1.869
2014	22.105	1.885
2015	22.576	2.131
2016	23.057	2.131
2017	23.553	2.151
2018	24.045	2.089
2019	24.547	2.088
2020	25.051	2.053

VFC in Billion Gallons

C. Vehicle Fuel Consumption

Statewide total on-road fuel consumption projected by the forecast is given in Figure-12. The values represent total gasoline and diesel fuel used on all public roads. The base year (1999) values are estimates using Board of Equalization data. Forecasts beyond 1999 use the MVSTAFF process with the 1999 estimate as a base.

As can be seen from Figure-12, on-road fuel consumption is expected to increase 2.46% in 2000. Annual fuel consumption by vehicle type and fuel type for each year of the forecast is given in Table-3. Total fuel consumption is expected to increase for autos and all types of trucks. Diesel fuel consumption for autos and light trucks are decreasing because the numbers of these total vehicles are projected to decrease.

Figure-13 graphs the annual total fuel consumption of the vehicle fleet by body type for years 1999 to 2020. The graphs correspond to the data given in the upper part of Table-3. Although motorcycle fuel consumption is not shown as a separate entry in the figure, it is included in the "Total" graph.

Table-3: CALIFORNIA TOTAL VEHICLE FUEL CONSUMPTION (BILLIONS)

VEH. TYPE	CAL. YEAR	AUTOS	BODY TYPE				M.C.	TOTAL
			TRK1	TRK2	TRK3	TRK4		
T O T A L	1999	9.762	2.274	1.802	1.174	1.353	0.017	16.382
	2000	9.979	2.319	1.866	1.203	1.402	0.017	16.786
	2001	10.124	2.365	1.916	1.231	1.444	0.017	17.097
	2002	10.268	2.401	1.966	1.256	1.481	0.017	17.390
	2003	10.440	2.447	2.026	1.279	1.517	0.017	17.725
	2004	10.686	2.513	2.098	1.300	1.549	0.017	18.163
	2005	10.893	2.574	2.164	1.319	1.578	0.017	18.545
	2006	11.096	2.631	2.223	1.336	1.603	0.017	18.905
	2007	11.321	2.691	2.281	1.356	1.633	0.017	19.299
	2008	11.550	2.753	2.338	1.379	1.664	0.017	19.700
	2009	11.782	2.815	2.393	1.405	1.700	0.017	20.111
	2010	12.020	2.878	2.446	1.434	1.738	0.017	20.533
	2011	12.230	2.935	2.495	1.460	1.773	0.017	20.911
	2012	12.447	2.995	2.544	1.486	1.808	0.017	21.298
GASES	2013	12.672	3.055	2.593	1.514	1.845	0.017	21.696
	2015	13.177	3.184	2.697	1.578	1.922	0.017	22.576
	2020	14.620	3.532	2.983	1.768	2.131	0.017	25.051
	1999	9.705	2.269	1.682	0.250	0.002	0.017	13.924
	2000	9.930	2.314	1.740	0.256	0.002	0.017	14.259
	2001	10.081	2.361	1.787	0.262	0.002	0.017	14.510
	2002	10.230	2.398	1.833	0.268	0.003	0.017	14.748
	2003	10.405	2.445	1.889	0.273	0.003	0.017	15.032
	2004	10.654	2.511	1.956	0.278	0.003	0.017	15.419
	2005	10.864	2.572	2.018	0.282	0.004	0.017	15.758
	2006	11.069	2.630	2.073	0.286	0.004	0.017	16.079
	2007	11.296	2.690	2.127	0.291	0.004	0.017	16.425
	2008	11.526	2.752	2.180	0.297	0.004	0.017	16.776
	2009	11.760	2.814	2.231	0.303	0.005	0.017	17.129
	2010	11.998	2.878	2.281	0.310	0.005	0.017	17.488
	2011	12.208	2.935	2.326	0.317	0.005	0.017	17.808
	2012	12.425	2.994	2.372	0.324	0.005	0.017	18.137
	2013	12.651	3.055	2.417	0.330	0.005	0.017	18.475
	2015	13.156	3.184	2.514	0.345	0.006	0.017	19.223
	2020	14.597	3.532	2.780	0.389	0.007	0.017	21.322
DIESEL	1999	0.056	0.006	0.120	0.924	1.352	0.000	2.458
	2000	0.049	0.005	0.125	0.948	1.400	0.000	2.527
	2001	0.044	0.004	0.129	0.969	1.441	0.000	2.587
	2002	0.039	0.003	0.133	0.989	1.479	0.000	2.641
	2003	0.035	0.002	0.137	1.006	1.514	0.000	2.694
	2004	0.032	0.002	0.142	1.023	1.545	0.000	2.743
	2005	0.029	0.001	0.146	1.037	1.574	0.000	2.788
	2006	0.027	0.001	0.150	1.049	1.599	0.000	2.826
	2007	0.025	0.001	0.154	1.065	1.629	0.000	2.873
	2008	0.024	0.001	0.158	1.082	1.660	0.000	2.924
	2009	0.023	0.001	0.162	1.101	1.695	0.000	2.982
	2010	0.022	0.001	0.166	1.124	1.733	0.000	3.045
	2011	0.022	0.000	0.169	1.143	1.768	0.000	3.103
	2012	0.022	0.000	0.173	1.163	1.803	0.000	3.161
	2013	0.021	0.000	0.176	1.184	1.839	0.000	3.220
	2015	0.021	0.000	0.183	1.232	1.916	0.000	3.353
	2020	0.022	0.000	0.203	1.379	2.125	0.000	3.728

Figure-13

CALIFORNIA VEHICLE FUEL CONSUMPTION BY BODY TYPE

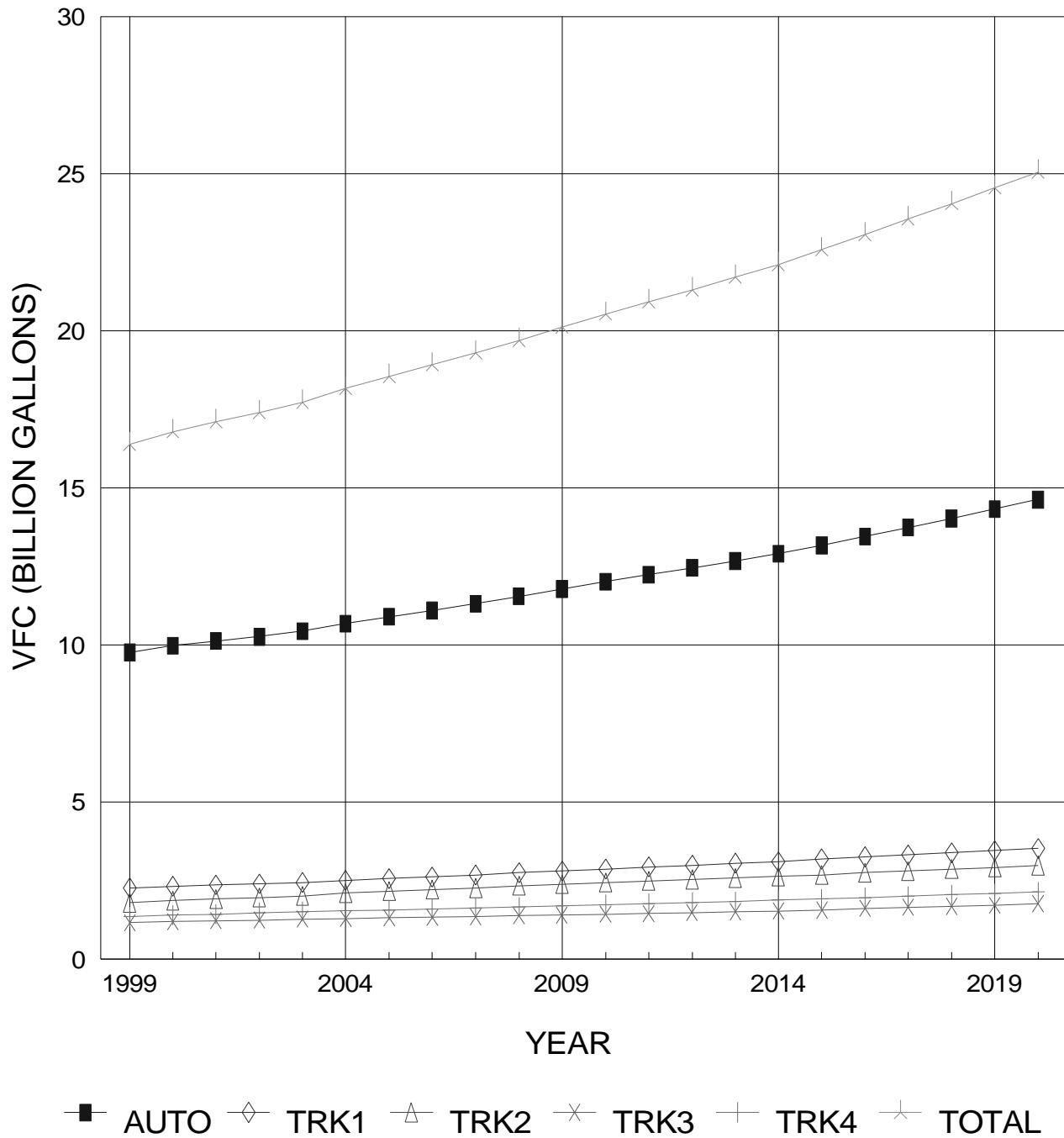
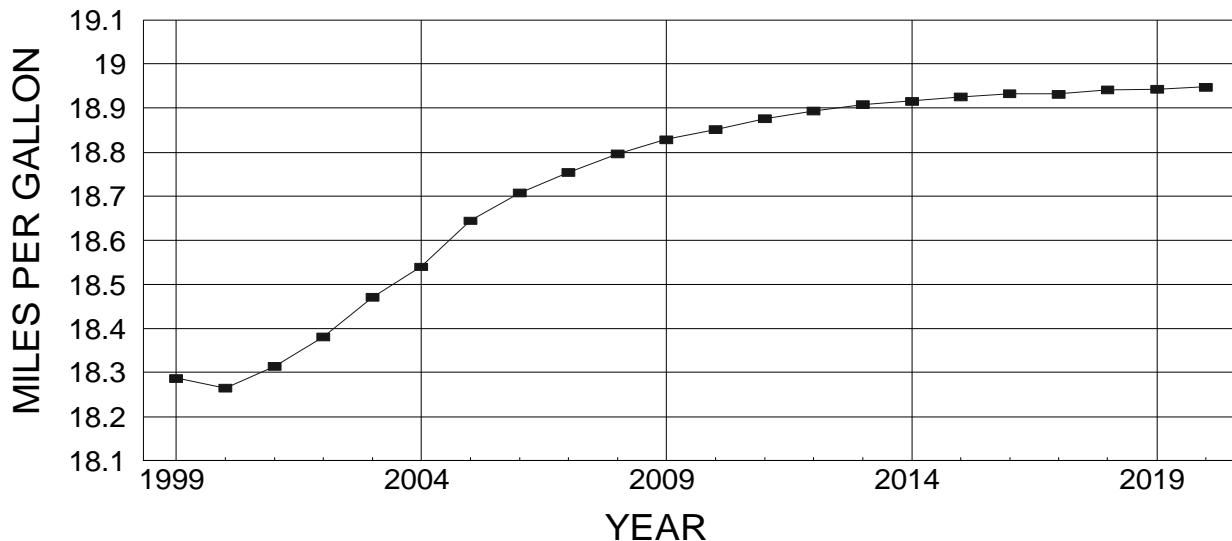


Figure-14
CALIFORNIA TOTAL VEHICLE FLEET FUEL ECONOMY



CALIFORNIA TOTAL VEHICLE FLEET FUEL ECONOMY

Year	MPG	%-CH
1999	18.287	
2000	18.265	-0.120
2001	18.314	0.268
2002	18.381	0.366
2003	18.471	0.490
2004	18.540	0.374
2005	18.645	0.566
2006	18.708	0.338
2007	18.755	0.251
2008	18.796	0.219
2009	18.829	0.176
2010	18.852	0.122
2011	18.876	0.127
2012	18.894	0.095
2013	18.908	0.074
2014	18.916	0.042
2015	18.926	0.053
2016	18.933	0.037
2017	18.932	-0.005
2018	18.941	0.048
2019	18.943	0.011
2020	18.948	0.026

MPG: Miles Per Gallon

D. Vehicle Fuel Economy

Forecasts of the total fleet on-road fuel economy are given in Figure-14. The results are a direct output of the Stratified Rate Model which computes the harmonic average fuel economy by weighting the number of vehicles in each stratum by the annual miles of travel and fuel economy of that stratum.

As can be seen from Figure-14, total fleet fuel economy is expected to improve slightly throughout the forecast period. This is the result of the assumption that the new car fleet fuel economy will remain at 27.5 miles per gallon, replacing the older and lower fuel efficiency vehicles.

Fuel economies of the fleet, stratified by body type and fuel type for each year of the forecast, are given in Table-4. Vehicle fuel economy is projected to continuously improve for all strata of vehicles. The greatest improvements are being projected for the heavy trucks. Fuel economy of year 2020 automobile fleet will be slightly (4.01 percent) better than it was in 1999; while the total vehicle fleet fuel economy will be only 3.61 percent better than it was in 1999.

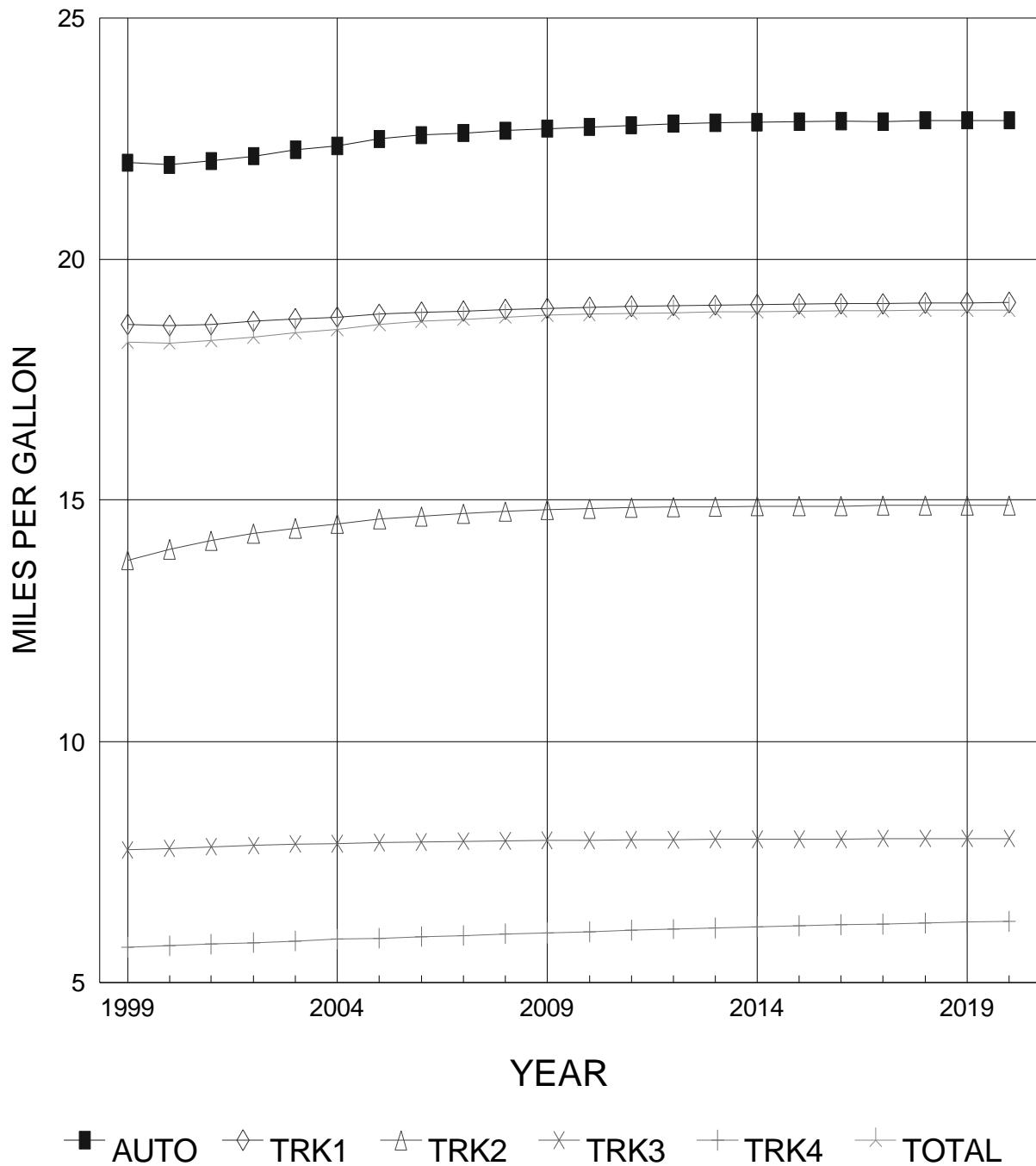
Figure-15 graphs the fuel economy of the vehicle fleet stratified by body type for the years 1999 to 2020. The graphs correspond to the data given in the upper part of Table-4. Although the fuel economy of motorcycles (assumed to be a constant value of 50.0 miles per gallon) is not shown in the figure, its effect is included in the "Total" graph.

Table-4: CALIFORNIA TOTAL VEHICLE FLEET FUEL ECONOMY

VEH. CAL. TYPE YEAR	AUTOS	TRK1	BODY TYPE TRK2	TRK3	TRK4	M.C.	TOTAL	
T O T A L	1999	21.994	18.644	13.759	7.745	5.725	50.000	18.287
	2000	21.950	18.620	13.978	7.785	5.760	50.000	18.265
	2001	22.030	18.646	14.161	7.815	5.795	50.000	18.314
	2002	22.131	18.712	14.303	7.845	5.830	50.000	18.381
	2003	22.267	18.765	14.420	7.868	5.859	50.000	18.471
	2004	22.349	18.800	14.514	7.887	5.894	50.000	18.540
	2005	22.491	18.860	14.608	7.904	5.924	50.000	18.645
	2006	22.567	18.895	14.670	7.916	5.954	50.000	18.708
	2007	22.619	18.928	14.726	7.929	5.978	50.000	18.755
	2008	22.666	18.958	14.765	7.939	6.008	50.000	18.796
	2009	22.708	18.981	14.799	7.952	6.033	50.000	18.829
	2010	22.743	19.000	14.824	7.957	6.058	50.000	18.852
	2011	22.778	19.023	14.842	7.962	6.083	50.000	18.876
	2012	22.806	19.038	14.855	7.968	6.107	50.000	18.894
	2013	22.826	19.049	14.866	7.974	6.132	50.000	18.908
	2015	22.850	19.072	14.879	7.979	6.177	50.000	18.926
	2020	22.876	19.101	14.889	7.990	6.271	50.000	18.948
G A S O L I N E	1999	21.964	18.632	13.444	7.118	5.669	50.000	20.158
	2000	21.924	18.611	13.688	7.161	5.693	50.000	20.148
	2001	22.007	18.639	13.890	7.186	5.710	50.000	20.223
	2002	22.110	18.706	14.049	7.210	5.729	50.000	20.314
	2003	22.249	18.761	14.180	7.228	5.744	50.000	20.424
	2004	22.333	18.797	14.286	7.247	5.758	50.000	20.492
	2005	22.476	18.857	14.390	7.259	5.766	50.000	20.603
	2006	22.554	18.893	14.459	7.271	5.777	50.000	20.664
	2007	22.607	18.926	14.521	7.284	5.785	50.000	20.709
	2008	22.654	18.957	14.564	7.290	5.794	50.000	20.748
	2009	22.697	18.980	14.602	7.302	5.800	50.000	20.782
	2010	22.732	18.999	14.628	7.308	5.804	50.000	20.809
	2011	22.768	19.022	14.648	7.308	5.813	50.000	20.836
	2012	22.797	19.037	14.662	7.314	5.818	50.000	20.857
	2013	22.816	19.048	14.674	7.320	5.823	50.000	20.871
	2015	22.841	19.071	14.688	7.327	5.827	50.000	20.890
	2020	22.867	19.101	14.698	7.333	5.836	50.000	20.911
D I E S E L	1999	27.049	23.349	18.159	7.915	5.725	0.000	7.688
	2000	27.247	23.407	18.007	7.953	5.760	0.000	7.639
	2001	27.303	23.406	17.901	7.985	5.795	0.000	7.607
	2002	27.575	23.447	17.814	8.016	5.830	0.000	7.587
	2003	27.603	23.529	17.736	8.042	5.860	0.000	7.573
	2004	27.586	23.529	17.672	8.061	5.894	0.000	7.573
	2005	27.909	23.483	17.621	8.080	5.924	0.000	7.576
	2006	27.963	26.437	17.582	8.092	5.954	0.000	7.582
	2007	28.095	23.986	17.554	8.105	5.979	0.000	7.586
	2008	28.217	24.013	17.534	8.118	6.009	0.000	7.598
	2009	28.680	24.002	17.522	8.131	6.034	0.000	7.608
	2010	28.700	24.012	17.513	8.137	6.058	0.000	7.616
	2011	27.910	24.009	17.507	8.143	6.083	0.000	7.624
	2012	27.787	24.017	17.504	8.150	6.108	0.000	7.634
	2013	28.627	24.003	17.502	8.156	6.133	0.000	7.647
	2015	28.444	24.010	17.501	8.162	6.178	0.000	7.668
	2020	28.338	24.015	17.500	8.175	6.272	0.000	7.719

Figure-15

CALIFORNIA VEHICLE FLEET FUEL ECONPMY BY BODY TYPE



REFERENCES

1. Lynch, R and Lee, L., "A Statewide Aggregate Model for Forecasting Vehicle Miles of Travel and Fuel Consumption", California Department of Transportation, Division of Transportation Planning, July 1979.
2. R. L. Polk, "Annual National Vehicle Population Profile, California", 1983, 1984, 1986, 1988, 1990, 1992.
3. UCLA, "The UCLA Anderson Forecast for the Nation and California", September 2000.
4. California Department of Finance, 10-Year Population Update, Budget Projections, May 1998.
5. State of California, Department of Finance, County Population Projections with Race/Ethnic Detail, Sacramento, California, December 1998.
6. U.S. Department of Commerce, Bureau of the Census, "Truck Inventory and Use Survey", 1977, 1982, 1987 and 1992.
7. The WEFA Group, "U.S. Long-Term Economic Outlook", Volume 1, Third Quarter 2000.
8. U.S. Department of Commerce, Bureau of the Census, "Vehicle Inventory and Use Survey", 1997.
9. State of California, Department of Finance, E-2 Report, County Population Estimates and Components of Change, 1998-1999, with Historical Estimates, 1990-1998, February 2000.

APPENDIX A

Vehicle Body Type Definitions:

The motor vehicle fleet is stratified into six classes by body type, one class of autos, four classes of trucks by gross vehicle weight and one class of motorcycles. These are defined as follows:

- AUTOS AUTOS include all passenger vehicles registered as regular autos and station wagons.
- TRK1 TRK1 includes all Truck Gross Vehicle Weight Class 1 trucks (GVW 0 to 6,000 lbs.)
- TRK2 TRK2 includes all Truck Gross Vehicle Weight Class 2 trucks (GVW 6,001 to 10,000 lbs.)
- TRK3 TRK3 includes trucks of Truck Gross Vehicle Weight Classes 3 (GVW 10,001 to 14,000 lbs.), 4 (GVW 14,001 to 16,000 lbs.), 5 (GVW 16,001 to 19,500 lbs.), 6 (GVW 19,501 to 26,000 lbs.), and 7 (GVW 26,001 to 33,000 lbs.)
- TRK4 TRK4 includes all trucks of Truck Gross Vehicle Weight Classes 8 and above (GVW 33,001+ lbs.)
- MC MC includes all registered motorcycles which excludes motor-bicycles and off-road motor-powered dirt bikes.

APPENDIX B

CALIFORNIA VEHICLE MILES/KILOMETERS OF TRAVEL BY COUNTY AND ROAD SYSTEM

1990 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	7152.000	4279.340	11431.340
ALPINE	41.000	7.262	48.262
AMADOR	223.000	61.620	284.620
BUTTE	540.000	915.457	1455.457
CALAVERAS	215.000	89.559	304.559
COLUSA	347.000	102.236	449.236
CONTRA COSTA	3445.000	3246.368	6691.368
DEL NORTE	150.000	61.124	211.124
EL DORADO	757.000	474.890	1231.890
FRESNO	2066.000	3172.677	5238.677
GLENN	290.000	91.583	381.583
HUMBOLDT	661.000	408.296	1069.296
IMPERIAL	800.000	452.897	1252.897
INYO	382.000	65.501	447.501
KERN	3275.000	2022.720	5297.720
KINGS	489.000	417.384	906.384
LAKE	256.000	120.888	376.888
LASSEN	265.000	200.682	465.682
LOS ANGELES	34243.000	37622.039	71865.040
MADERA	655.000	281.274	936.274
MARIN	1409.000	1082.729	2491.729
MARIPOSA	105.000	103.366	208.366
MENDOCINO	619.000	346.644	965.644
MERCED	1289.000	470.881	1759.881
MODOC	83.000	60.075	143.075
MONO	276.000	24.399	300.399
MONTEREY	1710.000	1372.504	3082.504
NAPA	531.000	356.069	887.069
NEVADA	565.000	308.774	873.774
ORANGE	11304.000	11466.120	22770.120
PLACER	1295.000	702.972	1997.972
PLUMAS	160.000	99.828	259.828
RIVERSIDE	7170.000	4289.729	11459.730
SACRAMENTO	3771.000	5032.580	8803.580
SAN BENITO	255.000	93.997	348.997
SAN BERNARDINO	8593.000	4624.414	13217.410
SAN DIEGO	12088.000	9415.592	21503.590
SAN FRANCISCO	1441.000	2191.836	3632.836
SAN JOAQUIN	2415.000	1931.905	4346.905
SAN LUIS OBISPO	1482.000	698.928	2180.928
SAN MATEO	4212.000	2003.598	6215.598
SANTA BARBARA	1963.000	1055.183	3018.183
SANTA CLARA	5915.000	7116.808	13031.810
SANTA CRUZ	892.000	846.475	1738.475
SHASTA	973.000	614.108	1587.108
SIERRA	60.000	29.915	89.915
SISKIYOU	570.000	199.754	769.754
SOLANO	2381.000	970.847	3351.847
SONOMA	1605.000	1425.999	3030.999
STANISLAUS	1268.000	1509.908	2777.908
SUTTER	320.000	275.183	595.183
TEHAMA	516.000	215.304	731.304
TRINITY	117.000	25.272	142.272
TULARE	1173.000	1300.106	2473.106
TUOLUMNE	291.000	190.485	481.485
VENTURA	2931.000	2464.488	5395.488
YOLO	979.000	533.314	1512.314
YUBA	230.000	250.136	480.136
TOTAL	139209.000	119794.000	259003.000

1990 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	11510.028	6886.930	18396.959
ALPINE	65.983	11.687	77.670
AMADOR	358.884	99.168	458.051
BUTTE	869.046	1473.285	2342.331
CALAVERAS	346.009	144.131	490.140
COLUSA	558.442	164.533	722.975
CONTRA COSTA	5544.190	5224.523	10768.713
DEL NORTE	241.402	98.370	339.771
EL DORADO	1218.273	764.261	1982.535
FRESNO	3324.905	5105.929	8430.833
GLENN	466.710	147.389	614.098
HUMBOLDT	1063.776	657.089	1720.865
IMPERIAL	1287.475	728.867	2016.342
INYO	614.769	105.414	720.183
KERN	5270.602	3255.252	8525.854
KINGS	786.969	671.714	1458.684
LAKE	411.992	194.550	606.542
LASSEN	426.476	322.966	749.443
LOS ANGELES	55108.766	60546.805	115655.571
MADERA	1054.120	452.667	1506.787
MARIN	2267.566	1742.483	4010.049
MARIPOSA	168.981	166.351	335.333
MENDOCINO	996.184	557.869	1554.053
MERCED	2074.444	757.810	2832.254
MODOC	133.576	96.681	230.257
MONO	444.179	39.266	483.445
MONTEREY	2751.978	2208.831	4960.809
NAPA	854.562	573.038	1427.599
NEVADA	909.279	496.924	1406.203
ORANGE	18192.025	18452.932	36644.956
PLACER	2084.101	1131.324	3215.424
PLUMAS	257.495	160.658	418.153
RIVERSIDE	11538.996	6903.649	18442.648
SACRAMENTO	6068.836	8099.152	14167.989
SAN BENITO	410.383	151.274	561.656
SAN BERNARDINO	13829.093	7442.273	21271.360
SAN DIEGO	19453.750	15152.927	34606.674
SAN FRANCISCO	2319.065	3527.418	5846.483
SAN JOAQUIN	3886.566	3109.100	6995.666
SAN LUIS OBISPO	2385.048	1124.816	3509.863
SAN MATEO	6778.557	3224.479	10003.035
SANTA BARBARA	3159.142	1698.152	4857.295
SANTA CLARA	9519.270	11453.393	20972.665
SANTA CRUZ	1435.535	1362.269	2797.804
SHASTA	1565.892	988.311	2554.203
SIERRA	96.561	48.144	144.704
SISKIYOU	917.326	321.473	1238.799
SOLANO	3831.848	1562.427	5394.275
SONOMA	2582.997	2294.923	4877.920
STANISLAUS	2040.648	2429.961	4470.610
SUTTER	514.990	442.864	957.854
TEHAMA	830.422	346.498	1176.920
TRINITY	188.293	40.671	228.965
TULARE	1887.760	2092.318	3980.078
TUOLUMNE	468.319	306.556	774.875
VENTURA	4716.987	3966.209	8683.196
YOLO	1575.548	858.286	2433.833
YUBA	370.149	402.555	772.704
TOTAL	224035.172	192789.750	416824.925

1995 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	7446.094	4978.716	12424.810
ALPINE	42.031	8.258	50.288
AMADOR	245.670	84.153	329.823
BUTTE	607.915	981.743	1589.659
CALAVERAS	250.213	115.479	365.692
COLUSA	392.990	109.167	502.157
CONTRA COSTA	3643.810	3466.372	7110.182
DEL NORTE	157.375	67.824	225.199
EL DORADO	802.615	660.853	1463.468
FRESNO	2349.317	3697.812	6047.128
GLENN	322.618	120.538	443.156
HUMBOLDT	686.710	442.605	1129.314
IMPERIAL	880.310	502.488	1382.798
INYO	373.176	72.673	445.849
KERN	3692.823	2365.436	6058.259
KINGS	517.071	450.224	967.295
LAKE	298.372	159.667	458.039
LASSEN	313.735	243.389	557.124
LOS ANGELES	35077.895	38915.496	73993.391
MADERA	778.416	345.037	1123.453
MARIN	1433.790	1123.358	2557.148
MARISPOSA	125.356	114.461	239.817
MENDOCINO	646.967	419.624	1066.591
MERCED	1349.182	740.422	2089.604
MODOC	92.546	68.090	160.636
MONO	251.333	26.732	278.064
MONTEREY	1803.910	1421.387	3225.297
NAPA	536.263	373.575	909.837
NEVADA	634.526	344.081	978.607
ORANGE	11224.334	11905.607	23129.941
PLACER	1489.990	1039.482	2529.472
PLUMAS	180.789	109.287	290.076
RIVERSIDE	7380.951	4928.492	12309.442
SACRAMENTO	4193.164	5100.004	9293.169
SAN BENITO	285.832	119.000	404.832
SAN BERNARDINO	9716.704	5973.938	15690.642
SAN DIEGO	12603.485	10450.808	23054.293
SAN FRANCISCO	1503.313	2221.684	3724.997
SAN JOAQUIN	2818.117	2100.808	4918.925
SAN LUIS OBISPO	1557.005	767.077	2324.082
SAN MATEO	4271.216	2162.862	6434.078
SANTA BARBARA	2016.736	1165.377	3182.114
SANTA CLARA	6202.178	7372.168	13574.347
SANTA CRUZ	964.584	901.866	1866.449
SHASTA	1076.579	674.745	1751.324
SIERRA	57.836	28.706	86.542
SISKIYOU	579.600	279.885	859.485
SOLANO	2612.947	1109.651	3722.597
SONOMA	1752.949	1604.533	3357.483
STANISLAUS	1373.184	2049.389	3422.573
SUTTER	370.762	303.935	674.697
TEHAMA	553.252	235.268	788.520
TRINITY	113.962	31.776	145.738
TULARE	1341.240	1462.093	2803.333
TUOLUMNE	293.840	210.761	504.601
VENTURA	3117.036	2664.815	5781.852
YOLO	1063.659	563.462	1627.121
YUBA	246.729	295.853	542.581
TOTAL	146715.016	130252.969	276968.000

1995 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	11983.327	8012.467	19995.793
ALPINE	67.642	13.290	80.931
AMADOR	395.368	135.431	530.799
BUTTE	978.344	1579.962	2558.308
CALAVERAS	402.679	185.845	588.524
COLUSA	632.456	175.687	808.143
CONTRA COSTA	5864.144	5578.585	11442.729
DEL NORTE	253.271	109.152	362.423
EL DORADO	1291.684	1063.540	2355.223
FRESNO	3780.859	5951.052	9731.909
GLENN	519.203	193.987	713.190
HUMBOLDT	1105.153	712.304	1817.455
IMPERIAL	1416.722	808.676	2225.398
INYO	600.569	116.956	717.524
KERN	5943.022	3806.800	9749.823
KINGS	832.145	724.565	1556.710
LAKE	480.183	256.959	737.142
LASSEN	504.908	391.697	896.604
LOS ANGELES	56452.398	62628.422	119080.820
MADERA	1252.739	555.283	1808.022
MARIN	2307.461	1807.870	4115.331
MARISPOSA	201.741	184.207	385.948
MENDOCINO	1041.193	675.319	1716.512
MERCED	2171.298	1191.594	3362.892
MODOC	148.938	109.580	258.519
MONO	404.481	43.021	447.501
MONTEREY	2903.112	2287.501	5190.612
NAPA	863.032	601.211	1464.241
NEVADA	1021.171	553.745	1574.915
ORANGE	18063.814	19160.217	37224.032
PLACER	2397.906	1672.884	4070.791
PLUMAS	290.952	175.880	466.832
RIVERSIDE	11878.489	7931.639	19810.127
SACRAMENTO	6748.243	8207.661	14955.906
SAN BENITO	460.002	191.512	651.514
SAN BERNARDINO	15637.520	9614.121	25251.641
SAN DIEGO	20283.344	16818.945	37102.288
SAN FRANCISCO	2419.348	3575.454	5994.802
SAN JOAQUIN	4535.320	3380.923	7916.242
SAN LUIS OBISPO	2505.757	1234.491	3740.247
SAN MATEO	6873.856	3480.789	10354.645
SANTA BARBARA	3245.622	1875.492	5121.116
SANTA CLARA	9981.438	11864.354	21845.794
SANTA CRUZ	1552.348	1451.413	3003.759
SHASTA	1732.586	1085.897	2818.483
SIERRA	93.078	46.198	139.276
SISKIYOU	932.776	450.431	1383.207
SOLANO	4205.130	1785.810	5990.939
SONOMA	2821.098	2582.246	5403.345
STANISLAUS	2209.926	3298.172	5508.097
SUTTER	596.684	489.136	1085.820
TEHAMA	890.373	378.627	1269.000
TRINITY	183.404	51.139	234.543
TULARE	2158.517	2353.010	4511.527
TUOLUMNE	472.890	339.187	812.077
VENTURA	5016.383	4288.604	9304.989
YOLO	1711.793	906.804	2618.597
YUBA	397.072	476.129	873.199
TOTAL	236114.938	209621.828	445736.791

1999 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	8309.415	5554.347	13863.762
ALPINE	44.601	8.376	52.977
AMADOR	253.003	93.627	346.630
BUTTE	609.708	1044.972	1654.680
CALAVERAS	241.703	127.565	369.268
COLUSA	405.406	101.500	506.906
CONTRA COSTA	3774.952	3943.216	7718.168
DEL NORTE	157.802	74.576	232.378
EL DORADO	812.511	734.826	1547.337
FRESNO	2517.035	3759.027	6276.062
GLENN	307.204	111.911	419.115
HUMBOLDT	696.210	470.273	1166.483
IMPERIAL	1050.714	496.500	1547.214
INYO	387.905	79.024	466.929
KERN	3858.553	2588.486	6447.039
KINGS	613.808	418.344	1032.152
LAKE	289.304	191.935	481.239
LASSEN	292.104	252.461	544.565
LOS ANGELES	36914.410	41558.668	78473.079
MADERA	876.512	365.294	1241.806
MARIN	1548.221	1203.559	2751.780
MARIPOSA	116.702	119.737	236.439
MENDOCINO	663.709	416.805	1080.514
MERCED	1428.720	695.382	2124.102
MODOC	80.301	73.391	153.692
MONO	231.303	29.689	260.992
MONTEREY	1986.227	1568.587	3554.814
NAPA	673.909	453.604	1127.513
NEVADA	629.209	371.478	1000.687
ORANGE	12259.770	13253.022	25512.792
PLACER	1553.221	1124.336	2677.557
PLUMAS	175.602	147.937	323.539
RIVERSIDE	8321.115	5665.613	13986.729
SACRAMENTO	4406.461	5482.000	9888.461
SAN BENITO	336.605	140.537	477.142
SAN BERNARDINO	9966.737	6414.896	16381.633
SAN DIEGO	14409.999	11281.762	25691.761
SAN FRANCISCO	1518.221	2396.318	3914.539
SAN JOAQUIN	3017.042	2183.205	5200.247
SAN LUIS OBISPO	1691.523	872.157	2563.680
SAN MATEO	4864.967	2581.656	7446.623
SANTA BARBARA	2179.930	1256.894	3436.824
SANTA CLARA	7585.805	7941.849	15527.654
SANTA CRUZ	1004.014	1047.795	2051.809
SHASTA	1054.915	787.210	1842.125
SIERRA	65.601	29.651	95.252
SISKIYOU	563.208	225.417	788.625
SOLANO	2710.438	1319.069	4029.507
SONOMA	1890.626	1829.612	3720.238
STANISLAUS	1358.319	1972.412	3330.731
SUTTER	385.205	335.204	720.409
TEHAMA	559.808	245.277	805.085
TRINITY	125.702	34.034	159.736
TULARE	1490.521	1457.828	2948.349
TUOLUMNE	290.604	224.386	514.990
VENTURA	3458.648	3028.320	6486.968
YOLO	1130.716	668.244	1798.960
YUBA	265.604	310.970	576.574
TOTAL	158412.094	141164.781	299576.877

1999 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	13372.701	8938.869	22311.572
ALPINE	71.778	13.480	85.258
AMADOR	407.169	150.678	557.847
BUTTE	981.230	1681.723	2662.953
CALAVERAS	388.983	205.296	594.279
COLUSA	652.438	163.348	815.786
CONTRA COSTA	6075.193	6346.002	12421.195
DEL NORTE	253.958	120.018	373.976
EL DORADO	1307.610	1182.589	2490.199
FRESNO	4050.774	6049.577	10100.351
GLENN	494.397	180.103	674.500
HUMBOLDT	1120.441	756.833	1877.274
IMPERIAL	1690.960	799.041	2490.000
INYO	624.273	127.177	751.449
KERN	6209.736	4165.771	10375.508
KINGS	987.828	673.261	1661.088
LAKE	465.590	308.889	774.479
LASSEN	470.096	406.297	876.392
LOS ANGELES	59407.953	66882.305	126290.266
MADERA	1410.609	587.885	1998.493
MARIN	2491.619	1936.944	4428.562
MARIPOSA	187.814	192.698	380.512
MENDOCINO	1068.136	670.784	1738.919
MERCED	2299.300	1119.110	3418.412
MODOC	129.232	118.111	247.343
MONO	372.246	47.780	420.026
MONTEREY	3196.521	2524.401	5720.922
NAPA	1084.551	730.006	1814.556
NEVADA	1012.614	597.838	1610.450
ORANGE	19730.176	21328.709	41058.883
PLACER	2499.665	1809.447	4309.112
PLUMAS	282.604	238.082	520.686
RIVERSIDE	13391.530	9117.935	22509.465
SACRAMENTO	7091.508	8822.438	15913.948
SAN BENITO	541.713	226.172	767.886
SAN BERNARDINO	16039.900	10323.792	26363.694
SAN DIEGO	23190.635	18156.266	41346.901
SAN FRANCISCO	2443.338	3856.506	6299.845
SAN JOAQUIN	4855.457	3513.534	8368.991
SAN LUIS OBISPO	2722.241	1403.602	4125.845
SAN MATEO	7829.401	4154.779	11984.181
SANTA BARBARA	3508.256	2022.778	5531.034
SANTA CLARA	12208.165	12781.188	24989.353
SANTA CRUZ	1615.802	1686.266	3302.068
SHASTA	1697.721	1266.893	2964.614
SIERRA	105.575	47.719	153.293
SISKIYOU	906.395	362.773	1269.169
SOLANO	4362.025	2122.839	6484.865
SONOMA	3042.666	2944.480	5987.146
STANISLAUS	2186.001	3174.294	5360.295
SUTTER	619.927	539.460	1159.386
TEHAMA	900.924	394.735	1295.659
TRINITY	202.298	54.772	257.070
TULARE	2398.760	2346.150	4744.911
TUOLUMNE	467.682	361.114	828.796
VENTURA	5566.151	4873.617	10439.770
YOLO	1819.709	1075.436	2895.145
YUBA	427.448	500.459	927.906
TOTAL	254939.406	227183.047	482122.551

2000 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	8467.414	5665.132	14132.547
ALPINE	45.652	8.581	54.234
AMADOR	256.997	95.192	352.188
BUTTE	627.020	1075.626	1702.646
CALAVERAS	248.467	131.255	379.722
COLUSA	422.464	105.867	528.331
CONTRA COSTA	3842.241	4017.172	7859.414
DEL NORTE	161.488	76.388	237.876
EL DORADO	837.108	757.763	1594.871
FRESNO	2581.560	3858.915	6440.475
GLENN	317.837	115.890	433.727
HUMBOLDT	705.722	477.134	1182.855
IMPERIAL	1094.152	517.499	1611.651
INYO	394.098	80.359	474.457
KERN	3983.421	2674.695	6658.116
KINGS	631.607	430.868	1062.475
LAKE	298.113	197.960	496.072
LASSEN	299.221	258.849	558.070
LOS ANGELES	37589.891	42357.805	79947.695
MADERA	909.046	379.199	1288.246
MARIN	1569.739	1221.402	2791.141
MARIPOSA	119.585	122.807	242.392
MENDOCINO	678.820	426.684	1105.504
MERCED	1470.602	716.421	2187.023
MODOC	81.755	74.788	156.542
MONO	236.395	30.370	266.765
MONTEREY	2042.400	1614.423	3656.823
NAPA	687.606	463.246	1150.852
NEVADA	644.987	381.141	1026.128
ORANGE	12495.220	13519.894	26015.113
PLACER	1602.171	1160.829	2763.000
PLUMAS	178.046	150.133	328.179
RIVERSIDE	8633.402	5883.612	14517.015
SACRAMENTO	4514.799	5621.915	10136.713
SAN BENITO	347.228	145.105	492.333
SAN BERNARDINO	10293.399	6631.201	16924.600
SAN DIEGO	14755.210	11562.590	26317.799
SAN FRANCISCO	1528.435	2414.644	3943.078
SAN JOAQUIN	3107.827	2250.954	5358.781
SAN LUIS OBISPO	1742.187	899.101	2641.288
SAN MATEO	4944.521	2626.270	7570.791
SANTA BARBARA	2234.766	1289.689	3524.455
SANTA CLARA	7738.801	8109.430	15848.231
SANTA CRUZ	1030.663	1076.589	2107.251
SHASTA	1080.391	806.958	1887.349
SIERRA	66.284	29.987	96.271
SISKIYOU	573.171	229.614	802.785
SOLANO	2777.670	1353.024	4130.694
SONOMA	1934.511	1873.792	3808.304
STANISLAUS	1399.860	2034.591	3434.452
SUTTER	395.364	344.359	739.723
TEHAMA	575.520	252.391	827.911
TRINITY	127.685	34.602	162.287
TULARE	1535.205	1502.904	3038.109
TUOLUMNE	297.688	230.066	527.754
VENTURA	3538.467	3101.040	6639.507
YOLO	1159.281	685.752	1845.032
YUBA	271.833	318.554	590.388
TOTAL	162125.000	144473.016	306597.938

2000 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	13626.982	9117.146	22744.130
ALPINE	73.470	13.810	87.281
AMADOR	413.597	153.197	566.792
BUTTE	1009.091	1731.052	2740.143
CALAVERAS	399.869	211.234	611.103
COLUSA	679.890	170.376	850.266
CONTRA COSTA	6183.487	6465.012	12648.501
DEL NORTE	259.890	122.935	382.824
EL DORADO	1347.195	1219.501	2566.696
FRESNO	4154.618	6210.322	10364.940
GLENN	511.509	186.507	698.016
HUMBOLDT	1135.750	767.873	1903.621
IMPERIAL	1760.867	832.834	2593.701
INYO	634.239	129.325	763.565
KERN	6410.695	4304.504	10715.199
KINGS	1016.473	693.415	1709.888
LAKE	479.766	318.586	798.350
LASSEN	481.550	416.577	898.127
LOS ANGELES	60495.066	68168.281	128663.344
MADERA	1462.968	610.262	2073.231
MARIN	2526.250	1965.656	4491.906
MARIPOSA	192.453	197.639	390.092
MENDOCINO	1092.455	686.681	1779.136
MERCED	2366.705	1152.968	3519.672
MODOC	131.572	120.360	251.930
MONO	380.441	48.876	429.317
MONTEREY	3286.924	2598.162	5885.086
NAPA	1106.595	745.522	1852.117
NEVADA	1038.006	613.387	1651.393
ORANGE	20109.107	21758.160	41867.266
PLACER	2578.444	1868.173	4446.617
PLUMAS	286.537	241.616	528.153
RIVERSIDE	13894.113	9468.756	23362.871
SACRAMENTO	7265.865	9047.595	16313.458
SAN BENITO	558.809	233.524	792.333
SAN BERNARDINO	16565.619	10671.884	27237.504
SAN DIEGO	23746.209	18608.186	42354.392
SAN FRANCISCO	2459.778	3885.993	6345.769
SAN JOAQUIN	5001.563	3622.559	8624.122
SAN LUIS OBISPO	2803.778	1446.963	4250.741
SAN MATEO	7957.435	4226.572	12184.007
SANTA BARBARA	3596.507	2075.553	5672.061
SANTA CLARA	12454.393	13050.862	25505.256
SANTA CRUZ	1658.691	1732.602	3391.292
SHASTA	1738.721	1298.673	3037.394
SIERRA	106.674	48.259	154.933
SISKIYOU	922.429	369.528	1291.957
SOLANO	4470.227	2177.481	6647.708
SONOMA	3113.294	3015.576	6128.871
STANISLAUS	2252.856	3274.357	5527.215
SUTTER	636.277	554.192	1190.469
TEHAMA	926.210	406.184	1332.394
TRINITY	205.489	55.687	261.176
TULARE	2470.673	2418.689	4889.363
TUOLUMNE	479.082	370.255	849.338
VENTURA	5694.611	4990.640	10685.251
YOLO	1865.682	1103.611	2969.291
YUBA	437.473	512.663	950.137
TOTAL	260914.891	232506.781	493421.554

2005 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	9339.008	6277.500	15616.508
ALPINE	51.488	9.723	61.211
AMADOR	278.987	103.820	382.807
BUTTE	723.983	1247.771	1971.754
CALAVERAS	286.321	151.959	438.280
COLUSA	521.114	131.200	652.314
CONTRA COSTA	4213.071	4425.490	8638.561
DEL NORTE	181.939	86.464	268.403
EL DORADO	975.417	887.093	1862.510
FRESNO	2941.002	4416.772	7357.774
GLENN	378.215	138.550	516.765
HUMBOLDT	758.138	514.969	1273.107
IMPERIAL	1344.905	639.072	1983.977
INYO	428.197	87.721	515.918
KERN	4688.814	3163.063	7851.876
KINGS	731.421	501.293	1232.714
LAKE	347.663	231.943	579.606
LASSEN	338.778	294.439	633.217
LOS ANGELES	41313.781	46771.793	88085.578
MADERA	1094.902	458.863	1553.765
MARIN	1688.293	1319.793	3008.086
MARIPOSA	135.617	139.923	275.540
MENDOCINO	762.582	481.576	1244.158
MERCED	1705.628	834.803	2540.431
MODOC	89.767	82.501	172.268
MONO	264.587	34.151	298.738
MONTEREY	2356.941	1871.767	4228.709
NAPA	763.272	516.628	1279.900
NEVADA	732.788	435.051	1167.839
ORANGE	13794.314	14995.334	28789.648
PLACER	1878.169	1367.166	3245.335
PLUMAS	191.510	162.242	353.752
RIVERSIDE	10419.152	7133.803	17552.955
SACRAMENTO	5117.160	6401.792	11518.951
SAN BENITO	407.130	170.933	578.063
SAN BERNARDINO	12140.492	7857.715	19998.207
SAN DIEGO	16672.508	13126.148	29798.656
SAN FRANCISCO	1586.553	2518.184	4104.736
SAN JOAQUIN	3618.113	2632.805	6250.918
SAN LUIS OBISPO	2026.879	1050.916	3077.794
SAN MATEO	5382.622	2872.339	8254.961
SANTA BARBARA	2539.969	1472.678	4012.647
SANTA CLARA	8583.848	9037.023	17620.871
SANTA CRUZ	1179.366	1237.681	2417.047
SHASTA	1221.933	916.946	2138.879
SIERRA	70.073	31.849	101.922
SISKIYOU	628.069	252.783	880.852
SOLANO	3151.627	1542.362	4693.989
SONOMA	2177.950	2119.458	4297.408
STANISLAUS	1633.605	2385.429	4019.034
SUTTER	452.035	395.560	847.596
TEHAMA	663.460	292.318	955.778
TRINITY	138.604	37.737	176.341
TULARE	1786.305	1756.901	3543.206
TUOLUMNE	337.061	261.714	598.775
VENTURA	3981.141	3505.309	7486.450
YOLO	1318.293	783.460	2101.753
YUBA	306.403	360.745	667.148
TOTAL	182840.938	162935.031	345775.969

2005 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	15029.677	10102.657	25132.334
ALPINE	82.862	15.648	98.510
AMADOR	448.986	167.082	616.068
BUTTE	1165.138	2008.093	3173.230
CALAVERAS	460.789	244.554	705.343
COLUSA	838.652	211.146	1049.798
CONTRA COSTA	6780.281	7122.136	13902.416
DEL NORTE	292.802	139.150	431.953
EL DORADO	1569.781	1427.638	2997.419
FRESNO	4733.084	7108.105	11841.189
GLENN	608.678	222.975	831.653
HUMBOLDT	1220.105	828.762	2048.867
IMPERIAL	2164.415	1028.487	3192.901
INYO	689.116	141.173	830.290
KERN	7545.915	5090.457	12636.370
KINGS	1177.108	806.753	1983.861
LAKE	559.509	373.276	932.785
LASSEN	545.210	473.854	1019.064
LOS ANGELES	66488.086	75271.906	141759.997
MADERA	1762.074	738.468	2500.542
MARIN	2717.044	2124.001	4841.045
MARIPOSA	218.254	225.184	443.439
MENDOCINO	1227.257	775.021	2002.278
MERCED	2744.942	1343.485	4088.427
MODOC	144.466	132.772	277.238
MONO	425.811	54.961	480.772
MONTEREY	3793.129	3012.317	6805.447
NAPA	1228.367	831.432	2059.799
NEVADA	1179.308	700.147	1879.455
ORANGE	22199.797	24132.650	46332.447
PLACER	3022.620	2200.240	5222.860
PLUMAS	308.205	261.103	569.309
RIVERSIDE	16768.000	11480.743	28248.743
SACRAMENTO	8235.271	10302.686	18537.955
SAN BENITO	655.212	275.090	930.302
SAN BERNARDINO	19538.229	12645.767	32183.995
SAN DIEGO	26831.801	21124.488	47956.288
SAN FRANCISCO	2553.310	4052.624	6605.932
SAN JOAQUIN	5822.789	4237.089	10059.877
SAN LUIS OBISPO	3261.946	1691.285	4953.229
SAN MATEO	8662.490	4622.582	13285.072
SANTA BARBARA	4087.684	2370.045	6457.729
SANTA CLARA	13814.364	14543.679	28358.043
SANTA CRUZ	1898.006	1991.854	3889.860
SHASTA	1966.510	1475.682	3442.192
SIERRA	112.772	51.256	164.028
SISKIYOU	1010.779	406.815	1417.594
SOLANO	5072.052	2482.191	7554.243
SONOMA	3505.071	3410.937	6916.008
STANISLAUS	2629.032	3838.976	6468.008
SUTTER	727.480	636.592	1364.074
TEHAMA	1067.735	470.440	1538.176
TRINITY	223.062	60.732	283.793
TULARE	2874.779	2827.458	5702.237
TUOLUMNE	542.447	421.188	963.635
VENTURA	6407.025	5641.248	12048.273
YOLO	2121.587	1260.857	3382.444
YUBA	493.108	580.563	1073.671
TOTAL	294253.969	262218.500	556472.483

2010 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	10214.117	6898.643	17112.760
ALPINE	57.583	10.927	68.509
AMADOR	300.324	112.296	412.620
BUTTE	828.945	1435.519	2264.464
CALAVERAS	327.181	174.477	501.658
COLUSA	637.422	161.251	798.673
CONTRA COSTA	4581.030	4835.067	9416.097
DEL NORTE	203.265	97.062	300.326
EL DORADO	1127.067	1029.924	2156.990
FRESNO	3322.451	5013.547	8335.999
GLENN	446.296	164.274	610.570
HUMBOLDT	807.631	551.218	1358.849
IMPERIAL	1639.290	782.692	2421.982
INYO	461.354	94.966	556.320
KERN	5472.932	3709.724	9182.655
KINGS	839.920	578.414	1418.334
LAKE	402.056	269.517	671.573
LASSEN	380.354	332.158	712.512
LOS ANGELES	45026.586	51219.449	96246.031
MADERA	1307.719	550.680	1858.398
MARIN	1800.605	1414.338	3214.944
MARIPOSA	152.512	158.108	310.620
MENDOCINO	849.510	539.044	1388.554
MERCED	1961.659	964.717	2926.376
MODOC	97.740	90.259	187.999
MONO	293.663	38.086	331.748
MONTEREY	2697.161	2152.221	4849.382
NAPA	840.173	571.406	1411.579
NEVADA	825.574	492.487	1318.061
ORANGE	15101.027	16494.508	31595.535
PLACER	2183.288	1596.887	3780.174
PLUMAS	204.269	173.880	378.149
RIVERSIDE	12469.038	8578.246	21047.283
SACRAMENTO	5751.350	7229.681	12981.030
SAN BENITO	473.371	199.697	673.068
SAN BERNARDINO	14199.200	9234.230	23433.430
SAN DIEGO	18681.279	14778.142	33459.422
SAN FRANCISCO	1633.098	2604.486	4237.584
SAN JOAQUIN	4176.935	3054.014	7230.949
SAN LUIS OBISPO	2338.357	1218.226	3556.582
SAN MATEO	5810.503	3115.533	8926.037
SANTA BARBARA	2862.693	1667.751	4530.444
SANTA CLARA	9441.490	9987.590	19429.080
SANTA CRUZ	1338.230	1411.132	2749.363
SHASTA	1370.452	1033.326	2403.778
SIERRA	73.458	33.548	107.006
SISKIYOU	682.466	275.994	958.459
SOLANO	3546.004	1743.683	5289.687
SONOMA	2431.503	2377.543	4809.046
STANISLAUS	1890.427	2773.677	4664.104
SUTTER	512.504	450.625	963.129
TEHAMA	758.436	335.766	1094.202
TRINITY	149.197	40.816	190.013
TULARE	2061.081	2036.871	4097.952
TUOLUMNE	378.449	295.258	673.706
VENTURA	4441.708	3929.576	8371.284
YOLO	1486.571	887.702	2374.273
YUBA	342.478	405.151	747.630
TOTAL	204690.984	182406.000	387096.906

2010 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	16438.027	11102.290	27540.318
ALPINE	92.671	17.585	110.255
AMADOR	483.325	180.723	664.048
BUTTE	1334.058	2310.244	3644.302
CALAVERAS	526.547	280.794	807.340
COLUSA	1025.831	259.508	1285.340
CONTRA COSTA	7372.453	7781.286	15153.739
DEL NORTE	327.123	156.206	483.328
EL DORADO	1813.839	1657.502	3471.339
FRESNO	5346.967	8068.522	13415.490
GLENN	718.244	264.373	982.617
HUMBOLDT	1299.756	887.099	2186.855
IMPERIAL	2638.182	1259.621	3897.802
INYO	742.477	152.833	895.310
KERN	8807.830	5970.222	14778.051
KINGS	1351.720	930.867	2282.587
LAKE	647.046	433.746	1080.792
LASSEN	612.120	534.556	1146.677
LOS ANGELES	72463.266	82429.711	154892.973
MADERA	2104.570	886.234	2990.802
MARIN	2897.793	2276.156	5173.951
MARIPOSA	245.444	254.450	499.894
MENDOCINO	1367.154	867.507	2234.661
MERCED	3156.984	1552.562	4709.546
MODOC	157.297	145.258	302.555
MONO	472.605	61.293	533.897
MONTEREY	4340.660	3463.664	7804.324
NAPA	1352.127	919.589	2271.716
NEVADA	1328.633	792.581	2121.214
ORANGE	24302.748	26545.338	50848.085
PLACER	3513.661	2569.940	6083.600
PLUMAS	328.739	279.833	608.572
RIVERSIDE	20066.971	13805.349	33872.319
SACRAMENTO	9255.900	11635.044	20890.943
SAN BENITO	761.817	321.381	1083.198
SAN BERNARDINO	22851.396	14861.053	37712.450
SAN DIEGO	30064.604	23783.113	53847.720
SAN FRANCISCO	2628.217	4191.514	6819.730
SAN JOAQUIN	6722.125	4914.959	11637.084
SAN LUIS OBISPO	3763.221	1960.545	5723.764
SAN MATEO	9351.099	5013.964	14365.064
SANTA BARBARA	4607.058	2683.985	7291.043
SANTA CLARA	15194.605	16073.468	31268.073
SANTA CRUZ	2153.672	2270.997	4424.671
SHASTA	2205.529	1662.977	3868.506
SIERRA	118.219	53.990	172.209
SISKIYOU	1098.323	444.169	1542.490
SOLANO	5706.740	2806.186	8512.926
SONOMA	3913.125	3826.285	7739.409
STANISLAUS	3042.347	4463.800	7506.148
SUTTER	824.795	725.211	1550.006
TEHAMA	1220.584	540.363	1760.947
TRINITY	240.109	65.687	305.796
TULARE	3316.988	3278.026	6595.014
TUOLUMNE	609.055	475.172	1084.225
VENTURA	7148.236	6324.040	13472.276
YOLO	2392.404	1428.618	3821.022
YUBA	551.165	652.027	1203.194
TOTAL	329418.219	293554.000	622972.085

2015 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	11002.803	7467.877	18470.680
ALPINE	63.428	12.095	75.524
AMADOR	318.419	119.648	438.067
BUTTE	934.814	1626.820	2561.634
CALAVERAS	368.235	197.336	565.571
COLUSA	767.933	195.223	963.156
CONTRA COSTA	4906.026	5203.556	10109.582
DEL NORTE	223.666	107.329	330.995
EL DORADO	1282.659	1177.871	2460.529
FRESNO	3696.786	5605.854	9302.640
GLENN	518.692	191.861	710.553
HUMBOLDT	847.384	581.194	1428.578
IMPERIAL	1967.988	944.253	2912.241
INYO	489.584	101.273	590.857
KERN	6291.865	4285.801	10577.666
KINGS	949.971	657.420	1607.391
LAKE	457.949	308.495	766.444
LASSEN	420.594	369.106	789.699
LOS ANGELES	48333.184	55251.285	103584.469
MADERA	1538.353	650.986	2189.339
MARIN	1891.436	1492.991	3384.427
MARIPOSA	168.925	175.985	344.910
MENDOCINO	932.080	594.346	1526.426
MERCED	2222.107	1098.178	3320.285
MODOC	104.816	97.270	202.086
MONO	321.020	41.839	362.858
MONTEREY	3039.956	2437.689	5477.646
NAPA	910.880	622.541	1533.421
NEVADA	916.086	549.169	1465.255
ORANGE	16282.280	17872.248	34154.527
PLACER	2499.709	1837.315	4337.024
PLUMAS	214.592	183.566	398.159
RIVERSIDE	14697.242	10160.907	24858.148
SACRAMENTO	6366.678	8042.541	14409.220
SAN BENITO	542.092	229.813	771.904
SAN BERNARDINO	16356.630	10689.606	27046.236
SAN DIEGO	20616.484	16389.242	37005.727
SAN FRANCISCO	1655.665	2653.464	4309.129
SAN JOAQUIN	4749.365	3489.635	8239.000
SAN LUIS OBISPO	2657.028	1391.055	4048.083
SAN MATEO	6177.830	3328.785	9506.615
SANTA BARBARA	3177.779	1860.420	5038.199
SANTA CLARA	10228.250	10873.081	21101.330
SANTA CRUZ	1495.600	1584.833	3080.433
SHASTA	1513.849	1147.062	2660.912
SIERRA	75.845	34.809	110.654
SISKIYOU	730.393	296.829	1027.222
SOLANO	3929.578	1941.803	5871.381
SONOMA	2673.646	2627.173	5300.819
STANISLAUS	2154.641	3176.889	5331.530
SUTTER	572.301	505.677	1077.979
TEHAMA	853.936	379.904	1233.841
TRINITY	158.178	43.486	201.664
TULARE	2342.270	2326.143	4668.413
TUOLUMNE	418.511	328.120	746.631
VENTURA	4880.843	4339.319	9220.162
YOLO	1651.055	990.774	2641.829
YUBA	377.030	448.219	825.249
TOTAL	225936.922	201338.016	427274.938

2015 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	17707.295	12018.383	29725.678
ALPINE	102.077	19.465	121.544
AMADOR	512.446	192.555	705.001
BUTTE	1504.437	2618.113	4122.550
CALAVERAS	592.617	317.582	910.198
COLUSA	1235.868	314.181	1550.049
CONTRA COSTA	7895.483	8374.312	16269.795
DEL NORTE	359.956	172.729	532.685
EL DORADO	2064.240	1895.600	3959.838
FRESNO	5949.400	9021.747	14971.148
GLENN	834.754	308.770	1143.524
HUMBOLDT	1363.732	935.341	2299.073
IMPERIAL	3167.170	1519.628	4686.798
INYO	787.909	162.983	950.892
KERN	10125.775	6897.328	17023.103
KINGS	1528.830	1058.015	2586.845
LAKE	736.997	496.475	1233.472
LASSEN	676.880	594.019	1270.897
LOS ANGELES	77784.719	88918.328	166703.044
MADERA	2475.739	1047.660	3523.400
MARIN	3043.971	2402.736	5446.707
MARIPOSA	271.858	283.220	555.079
MENDOCINO	1500.037	956.507	2456.545
MERCED	3576.135	1767.346	5343.481
MODOC	168.685	156.541	325.226
MONO	516.632	67.333	583.963
MONTEREY	4892.335	3923.080	8815.417
NAPA	1465.919	1001.883	2467.802
NEVADA	1474.297	883.802	2358.099
ORANGE	26203.789	28762.596	54966.383
PLACER	4022.892	2956.872	6979.764
PLUMAS	345.352	295.421	640.775
RIVERSIDE	23652.918	16352.395	40005.311
SACRAMENTO	10246.175	12943.215	23189.392
SAN BENITO	872.413	369.848	1242.259
SAN BERNARDINO	26323.445	17203.254	43526.698
SAN DIEGO	33179.016	26375.928	59554.945
SAN FRANCISCO	2664.534	4270.336	6934.871
SAN JOAQUIN	7643.362	5616.023	13259.385
SAN LUIS OBISPO	4276.072	2238.686	6514.758
SAN MATEO	9942.254	5357.160	15299.414
SANTA BARBARA	5114.140	2994.056	8108.195
SANTA CLARA	16460.773	17498.527	33959.299
SANTA CRUZ	2406.935	2550.542	4957.476
SHASTA	2436.304	1846.017	4282.323
SIERRA	122.061	56.020	178.080
SISKIYOU	1175.454	477.700	1653.154
SOLANO	6324.043	3125.029	9449.072
SONOMA	4302.816	4228.025	8530.841
STANISLAUS	3467.559	5112.707	8580.266
SUTTER	921.029	813.808	1734.839
TEHAMA	1374.277	611.396	1985.675
TRINITY	254.563	69.984	324.547
TULARE	3769.518	3743.564	7513.082
TUOLUMNE	673.528	528.058	1201.586
VENTURA	7854.956	6983.457	14838.412
YOLO	2657.115	1594.496	4251.612
YUBA	606.771	721.339	1328.110
TOTAL	363610.219	324022.125	687632.360

2020 ANNUAL STATEWIDE VMT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	11915.509	8128.238	20043.746
ALPINE	70.240	13.462	83.701
AMADOR	339.402	128.177	467.579
BUTTE	1059.819	1853.684	2913.503
CALAVERAS	416.648	224.409	641.056
COLUSA	930.093	237.642	1167.736
CONTRA COSTA	5282.060	5630.717	10912.776
DEL NORTE	247.426	119.331	366.757
EL DORADO	1467.504	1354.428	2821.932
FRESNO	4135.202	6302.375	10437.577
GLENN	606.043	225.305	831.347
HUMBOLDT	893.829	616.148	1509.977
IMPERIAL	2375.176	1145.385	3520.561
INYO	522.308	108.588	630.896
KERN	7271.860	4978.381	12250.241
KINGS	1080.165	751.298	1831.464
LAKE	524.390	355.039	879.429
LASSEN	467.568	412.404	879.972
LOS ANGELES	52158.922	59926.031	112084.953
MADERA	1819.300	773.767	2593.066
MARIN	1997.429	1584.627	3582.057
MARIPOSA	188.102	196.953	385.055
MENDOCINO	1028.121	658.902	1687.023
MERCED	2530.541	1256.929	3787.470
MODOC	113.003	105.398	218.402
MONO	352.794	46.212	399.006
MONTEREY	3444.566	2776.103	6220.669
NAPA	992.796	681.957	1674.752
NEVADA	1021.935	615.719	1637.654
ORANGE	17649.434	19470.840	37120.273
PLACER	2877.231	2125.489	5002.720
PLUMAS	226.639	194.851	421.489
RIVERSIDE	17415.887	12101.304	29517.191
SACRAMENTO	7085.375	8995.663	16081.038
SAN BENITO	624.094	265.914	890.009
SAN BERNARDINO	18942.205	12441.948	31384.154
SAN DIEGO	22873.332	18275.266	41148.598
SAN FRANCISCO	1687.483	2718.130	4405.613
SAN JOAQUIN	5429.004	4009.171	9438.176
SAN LUIS OBISPO	3035.207	1597.079	4632.286
SAN MATEO	6603.360	3576.059	10179.419
SANTA BARBARA	3546.331	2086.684	5633.015
SANTA CLARA	11139.585	11901.733	23041.318
SANTA CRUZ	1680.378	1789.636	3470.014
SHASTA	1681.157	1280.273	2961.430
SIERRA	78.728	36.314	115.042
SISKIYOU	785.850	320.981	1106.831
SOLANO	4377.835	2174.246	6552.081
SONOMA	2955.561	2918.869	5874.430
STANISLAUS	2468.862	3658.591	6127.453
SUTTER	642.479	570.555	1213.034
TEHAMA	966.582	432.193	1398.775
TRINITY	168.594	46.584	215.177
TULARE	2675.996	2671.007	5347.002
TUOLUMNE	465.280	366.631	831.911
VENTURA	5391.958	4817.960	10209.918
YOLO	1843.505	1111.853	2955.358
YUBA	417.277	498.574	915.852
TOTAL	250987.938	223662.000	474649.906

2020 ANNUAL STATEWIDE VKT DISTRIBUTION BY COUNTY (MILLIONS)

COUNTY	SHS	OTHER	TOTAL
ALAMEDA	19176.152	13081.131	32257.282
ALPINE	113.040	21.665	134.704
AMADOR	546.215	206.281	752.495
BUTTE	1705.613	2983.215	4688.829
CALAVERAS	670.530	361.151	1031.680
COLUSA	1496.840	382.448	1879.289
CONTRA COSTA	8500.651	9061.761	17562.411
DEL NORTE	398.194	192.045	590.238
EL DORADO	2361.719	2179.740	4541.459
FRESNO	6654.962	10142.689	16797.652
GLENN	975.332	362.593	1337.923
HUMBOLDT	1438.478	991.594	2430.072
IMPERIAL	3822.475	1843.318	5665.794
INYO	840.573	174.755	1015.329
KERN	11702.924	8011.928	19714.852
KINGS	1738.357	1209.097	2947.456
LAKE	843.924	571.380	1415.304
LASSEN	752.478	663.700	1416.178
LOS ANGELES	83941.648	96441.602	180383.247
MADERA	2927.880	1245.257	4173.135
MARIN	3214.550	2550.210	5764.762
MARIPOSA	302.721	316.965	619.686
MENDOCINO	1654.600	1060.400	2715.000
MERCED	4072.511	2022.831	6095.342
MODOC	181.861	169.622	351.484
MONO	567.767	74.371	642.138
MONTEREY	5543.492	4467.705	10011.196
NAPA	1597.750	1097.503	2695.252
NEVADA	1644.645	990.904	2635.549
ORANGE	28404.012	31335.279	59739.289
PLACER	4630.455	3420.643	8051.097
PLUMAS	364.740	313.582	678.321
RIVERSIDE	28028.154	19475.160	47503.314
SACRAMENTO	11402.806	14477.116	25879.922
SAN BENITO	1004.382	427.947	1432.331
SAN BERNARDINO	30484.523	20023.375	50507.900
SAN DIEGO	36811.059	29411.189	66222.250
SAN FRANCISCO	2715.741	4374.406	7090.147
SAN JOAQUIN	8737.135	6452.135	15189.272
SAN LUIS OBISPO	4884.692	2570.250	7454.942
SAN MATEO	10627.078	5755.109	16382.187
SANTA BARBARA	5707.267	3358.192	9065.459
SANTA CLARA	17927.424	19153.982	37081.407
SANTA CRUZ	2704.306	2880.140	5584.446
SHASTA	2705.560	2060.400	4765.960
SIERRA	126.700	58.442	185.142
SISKIYOU	1264.703	516.569	1781.272
SOLANO	7045.442	3499.110	10544.552
SONOMA	4756.514	4697.464	9453.979
STANISLAUS	3973.248	5887.932	9861.180
SUTTER	1033.970	918.219	1952.189
TEHAMA	1555.563	695.547	2251.110
TRINITY	271.326	74.970	346.294
TULARE	4306.598	4298.569	8605.166
TUOLUMNE	748.796	590.035	1338.831
VENTURA	8677.516	7753.755	16431.270
YOLO	2966.834	1789.354	4756.188
YUBA	671.542	802.377	1473.921
TOTAL	403925.938	359949.094	763874.981

APPENDIX C

CALIFORNIA VEHICLE FUEL CONSUMPTION BY COUNTY AND FUEL TYPE

1995 ANNUAL STATEWIDE VFC DISTRIBUTION BY COUNTY

COUNTY	GASOLINE	DIESEL	TOTAL
ALAMEDA	567.313	78.239	645.552
ALPINE	2.162	0.289	2.450
AMADOR	15.290	2.414	17.705
BUTTE	71.271	10.898	82.169
CALAVERAS	16.377	2.018	18.395
COLUSA	21.142	10.991	32.133
CONTRA COSTA	327.205	37.697	364.902
DEL NORTE	9.941	1.900	11.842
EL DORADO	66.902	7.834	74.736
FRESNO	273.532	59.844	333.376
GLENN	18.324	9.597	27.921
HUMBOLDT	52.842	9.525	62.367
IMPERIAL	63.581	19.557	83.137
INYO	21.197	4.293	25.490
KERN	269.325	101.270	370.595
KINGS	42.782	12.264	55.046
LAKE	20.964	2.679	23.643
LASSEN	25.602	6.000	31.602
LOS ANGELES	3507.030	472.980	3980.011
MADERA	51.944	16.529	68.472
MARIN	121.026	11.322	132.348
MARISPOSA	11.018	0.909	11.927
MENDOCINO	48.815	7.713	56.529
MERCED	94.719	34.059	128.778
MODOC	7.328	2.035	9.363
MONO	12.752	2.482	15.235
MONTEREY	151.091	27.608	178.698
NAPA	42.532	5.748	48.279
NEVADA	44.368	7.598	51.966
ORANGE	1061.933	133.375	1195.308
PLACER	114.180	19.018	133.198
PLUMAS	13.130	2.888	16.018
RIVERSIDE	557.851	139.249	697.100
SACRAMENTO	428.933	66.411	495.344
SAN BENITO	18.717	4.873	23.591
SAN BERNARDINO	714.652	177.707	892.359
SAN DIEGO	1070.276	124.792	1195.068
SAN FRANCISCO	172.838	14.092	186.930
SAN JOAQUIN	222.537	67.002	289.539
SAN LUIS OBISPO	105.364	18.408	123.772
SAN MATEO	305.807	26.189	331.996
SANTA BARBARA	145.217	22.769	167.985
SANTA CLARA	658.540	67.197	725.737
SANTA CRUZ	83.801	8.286	92.088
SHASTA	75.620	21.871	97.491
SIERRA	4.038	1.269	5.308
SISKIYOU	34.361	18.660	53.021
SOLANO	172.492	28.194	200.686
SONOMA	153.252	19.926	173.178
STANISLAUS	154.715	34.255	188.969
SUTTER	31.307	6.032	37.339
TEHAMA	33.137	13.046	46.183
TRINITY	6.602	2.383	8.985
TULARE	125.786	39.598	165.384
TUOLUMNE	22.443	2.841	25.284
VENTURA	270.426	35.839	306.265
YOLO	76.526	19.521	96.046
YUBA	25.401	3.527	28.929
TOTAL	12838.255	2105.512	14943.767

VFC in Million Gallons

2000 ANNUAL STATEWIDE VFC DISTRIBUTION BY COUNTY

COUNTY	GASOLINE	DIESEL	TOTAL
ALAMEDA	658.922	105.402	764.324
ALPINE	2.464	0.840	3.304
AMADOR	16.142	4.504	20.646
BUTTE	79.095	14.655	93.750
CALAVERAS	17.505	4.175	21.680
COLUSA	23.344	12.634	35.977
CONTRA COSTA	366.645	57.243	423.887
DEL NORTE	10.857	3.351	14.208
EL DORADO	73.789	15.746	89.535
FRESNO	298.150	62.416	360.566
GLENN	19.338	9.198	28.536
HUMBOLDT	54.521	13.064	67.585
IMPERIAL	72.894	27.178	100.072
INYO	21.597	7.075	28.672
KERN	305.773	81.057	386.830
KINGS	48.201	16.934	65.135
LAKE	22.796	5.944	28.740
LASSEN	25.601	6.982	32.583
LOS ANGELES	3740.168	510.981	4251.149
MADERA	59.360	14.351	73.711
MARIN	130.212	20.300	150.512
MARIPOSA	11.181	2.617	13.798
MENDOCINO	50.852	12.910	63.761
MERCED	100.210	28.170	128.379
MODOC	7.173	2.014	9.188
MONO	12.110	4.197	16.307
MONTEREY	169.768	32.187	201.956
NAPA	53.539	9.382	62.921
NEVADA	46.409	17.321	63.729
ORANGE	1217.598	162.630	1380.227
PLACER	126.944	33.279	160.223
PLUMAS	15.124	3.642	18.766
RIVERSIDE	671.630	143.447	815.076
SACRAMENTO	472.522	76.253	548.775
SAN BENITO	22.658	5.674	28.332
SAN BERNARDINO	779.273	192.473	971.746
SAN DIEGO	1226.082	202.832	1428.914
SAN FRANCISCO	184.526	24.810	209.336
SAN JOAQUIN	247.320	57.022	304.342
SAN LUIS OBISPO	122.265	25.654	147.919
SAN MATEO	353.246	54.700	407.945
SANTA BARBARA	163.730	30.301	194.031
SANTA CLARA	740.083	110.327	850.409
SANTA CRUZ	98.371	14.894	113.265
SHASTA	86.326	25.335	111.662
SIERRA	4.364	1.555	5.919
SISKIYOU	35.651	17.978	53.629
SOLANO	191.325	39.342	230.667
SONOMA	177.255	30.461	207.716
STANISLAUS	159.226	31.704	190.930
SUTTER	34.234	7.240	41.473
TEHAMA	37.168	15.836	53.004
TRINITY	7.392	2.389	9.781
TULARE	140.773	28.574	169.347
TUOLUMNE	24.400	5.326	29.726
VENTURA	309.525	49.775	359.300
YOLO	84.354	25.013	109.368
YUBA	27.385	5.359	32.744
TOTAL	14259.367	2526.652	16786.019

VFC in Million Gallons

2005 ANNUAL STATEWIDE VFC DISTRIBUTION BY COUNTY

COUNTY	GASOLINE	DIESEL	TOTAL
ALAMEDA	713.544	113.127	826.671
ALPINE	2.726	0.926	3.652
AMADOR	17.197	4.776	21.973
BUTTE	89.766	16.505	106.272
CALAVERAS	19.802	4.697	24.499
COLUSA	28.258	15.261	43.520
CONTRA COSTA	394.929	61.090	456.019
DEL NORTE	12.007	3.691	15.698
EL DORADO	84.453	17.907	102.360
FRESNO	333.826	69.389	403.215
GLENN	22.588	10.717	33.305
HUMBOLDT	57.512	13.703	71.216
IMPERIAL	87.962	32.682	120.644
INYO	23.019	7.514	30.532
KERN	353.432	93.198	446.630
KINGS	54.819	19.185	74.004
LAKE	26.105	6.773	32.878
LASSEN	28.472	7.726	36.198
LOS ANGELES	4038.315	545.902	4584.217
MADERA	70.169	16.874	87.043
MARIN	137.525	21.244	158.769
MARIPOSA	12.458	2.897	15.354
MENDOCINO	56.091	14.165	70.256
MERCED	114.092	31.919	146.011
MODOC	7.737	2.162	9.899
MONO	13.293	4.592	17.886
MONTEREY	192.399	36.204	228.603
NAPA	58.353	10.143	68.496
NEVADA	51.776	19.253	71.028
ORANGE	1320.452	174.471	1494.923
PLACER	146.142	38.103	184.245
PLUMAS	15.978	3.825	19.803
RIVERSIDE	795.898	168.868	964.766
SACRAMENTO	526.216	84.153	610.369
SAN BENITO	26.074	6.496	32.570
SAN BERNARDINO	902.479	221.631	1124.110
SAN DIEGO	1360.484	223.122	1583.607
SAN FRANCISCO	188.242	25.037	213.279
SAN JOAQUIN	282.749	64.796	347.546
SAN LUIS OBISPO	139.629	29.110	168.739
SAN MATEO	377.459	57.917	435.376
SANTA BARBARA	182.686	33.553	216.239
SANTA CLARA	806.388	119.059	925.447
SANTA CRUZ	110.575	16.582	127.157
SHASTA	95.891	28.008	123.899
SIERRA	4.529	1.608	6.137
SISKIYOU	38.352	19.291	57.643
SOLANO	213.078	43.521	256.600
SONOMA	196.021	33.410	229.431
STANISLAUS	182.611	36.097	218.708
SUTTER	38.444	8.075	46.519
TEHAMA	42.064	17.868	59.932
TRINITY	7.873	2.535	10.408
TULARE	160.901	32.436	193.337
TUOLUMNE	27.132	5.885	33.017
VENTURA	342.026	54.517	396.544
YOLO	94.186	27.799	121.985
YUBA	30.328	5.892	36.220
TOTAL	15757.511	2787.893	18545.403

VFC in Million Gallons

2010 ANNUAL STATEWIDE VFC DISTRIBUTION BY COUNTY

COUNTY	GASOLINE	DIESEL	TOTAL
ALAMEDA	775.249	120.153	895.402
ALPINE	3.026	1.006	4.032
AMADOR	18.383	4.996	23.379
BUTTE	102.220	18.377	120.597
CALAVERAS	22.476	5.216	27.692
COLUSA	34.330	18.148	52.479
CONTRA COSTA	426.806	64.528	491.334
DEL NORTE	13.325	4.008	17.333
EL DORADO	96.983	20.116	117.099
FRESNO	375.031	76.204	451.235
GLENN	26.478	12.295	38.773
HUMBOLDT	60.873	14.189	75.062
IMPERIAL	106.515	38.725	145.240
INYO	24.618	7.866	32.484
KERN	409.906	105.729	515.635
KINGS	62.562	21.421	83.983
LAKE	29.996	7.614	37.610
LASSEN	31.772	8.435	40.207
LOS ANGELES	4374.628	577.873	4952.502
MADERA	83.225	19.585	102.810
MARIN	145.728	22.006	167.734
MARIPOSA	13.926	3.166	17.093
MENDOCINO	62.080	15.337	77.417
MERCED	130.338	35.677	166.015
MODOC	8.374	2.289	10.663
MONO	14.642	4.952	19.594
MONTEREY	218.773	40.252	259.025
NAPA	63.810	10.846	74.656
NEVADA	57.964	21.088	79.052
ORANGE	1436.718	185.500	1622.218
PLACER	168.814	43.047	211.861
PLUMAS	16.937	3.967	20.904
RIVERSIDE	946.321	196.357	1142.677
SACRAMENTO	587.960	91.900	679.860
SAN BENITO	30.106	7.341	37.446
SAN BERNARDINO	1048.694	251.887	1300.581
SAN DIEGO	1514.626	242.825	1757.451
SAN FRANCISCO	192.669	25.039	217.708
SAN JOAQUIN	324.342	72.698	397.040
SAN LUIS OBISPO	159.991	32.630	192.621
SAN MATEO	404.662	60.698	465.360
SANTA BARBARA	204.514	36.730	241.244
SANTA CLARA	881.542	127.214	1008.756
SANTA CRUZ	124.704	18.277	142.982
SHASTA	106.880	30.536	137.417
SIERRA	4.717	1.638	6.355
SISKIYOU	41.405	20.381	61.786
SOLANO	238.096	47.565	285.661
SONOMA	217.495	36.244	253.739
STANISLAUS	210.134	40.611	250.745
SUTTER	43.317	8.898	52.214
TEHAMA	47.772	19.859	67.631
TRINITY	8.413	2.652	11.066
TULARE	184.524	36.379	220.903
TUOLUMNE	30.271	6.423	36.693
VENTURA	379.193	59.088	438.281
YOLO	105.523	30.470	135.993
YUBA	33.699	6.403	40.102
TOTAL	17488.080	3045.354	20533.434

VFC in Million Gallons

2015 ANNUAL STATEWIDE VFC DISTRIBUTION BY COUNTY

COUNTY	GASOLINE	DIESEL	TOTAL
ALAMEDA	833.426	128.525	961.951
ALPINE	3.322	1.100	4.422
AMADOR	19.437	5.259	24.696
BUTTE	115.171	20.601	135.772
CALAVERAS	25.237	5.829	31.066
COLUSA	41.223	21.700	62.923
CONTRA COSTA	456.413	68.651	525.064
DEL NORTE	14.626	4.378	19.004
EL DORADO	110.185	22.745	132.930
FRESNO	416.841	84.240	501.081
GLENN	30.684	14.184	44.868
HUMBOLDT	63.737	14.785	78.522
IMPERIAL	127.546	46.153	173.699
INYO	26.038	8.285	34.323
KERN	470.261	120.690	590.951
KINGS	70.609	24.058	94.667
LAKE	34.094	8.614	42.708
LASSEN	35.070	9.265	44.336
LOS ANGELES	4689.463	616.326	5305.789
MADERA	97.647	22.876	120.523
MARIN	152.799	22.958	175.757
MARIPOSA	15.401	3.483	18.884
MENDOCINO	67.967	16.711	84.678
MERCED	147.280	40.121	187.401
MODOC	8.964	2.439	11.403
MONO	15.948	5.372	21.320
MONTEREY	246.125	45.055	291.180
NAPA	69.040	11.677	80.717
NEVADA	64.171	23.232	87.403
ORANGE	1546.910	198.724	1745.633
PLACER	192.897	48.935	241.832
PLUMAS	17.761	4.139	21.901
RIVERSIDE	1113.165	229.813	1342.978
SACRAMENTO	650.046	101.073	751.119
SAN BENITO	34.386	8.347	42.733
SAN BERNARDINO	1205.479	288.078	1493.557
SAN DIEGO	1668.469	266.132	1934.601
SAN FRANCISCO	195.143	25.231	220.374
SAN JOAQUIN	368.066	82.087	450.153
SAN LUIS OBISPO	181.366	36.817	218.183
SAN MATEO	429.263	64.071	493.334
SANTA BARBARA	226.523	40.481	267.004
SANTA CLARA	953.602	136.921	1090.523
SANTA CRUZ	139.164	20.292	159.456
SHASTA	117.831	33.495	151.327
SIERRA	4.857	1.679	6.537
SISKIYOU	44.188	21.651	65.839
SOLANO	263.216	52.327	315.543
SONOMA	238.778	39.593	278.370
STANISLAUS	239.241	45.995	285.235
SUTTER	48.287	9.868	58.155
TEHAMA	53.644	22.196	75.840
TRINITY	8.893	2.791	11.683
TULARE	209.366	41.073	250.439
TUOLUMNE	33.412	7.054	40.466
VENTURA	415.977	64.497	480.475
YOLO	116.935	33.599	150.534
YUBA	37.049	7.004	44.052
TOTAL	19222.639	3353.276	22575.915

VFC in Million Gallons

2020 ANNUAL STATEWIDE VFC DISTRIBUTION BY COUNTY

COUNTY	GASOLINE	DIESEL	TOTAL
ALAMEDA	903.237	138.673	1041.910
ALPINE	3.676	1.213	4.889
AMADOR	20.716	5.582	26.298
BUTTE	130.818	23.293	154.111
CALAVERAS	28.565	6.570	35.136
COLUSA	49.888	26.163	76.051
CONTRA COSTA	492.042	73.672	565.714
DEL NORTE	16.182	4.823	21.005
EL DORADO	126.195	25.939	152.135
FRESNO	467.069	93.924	560.993
GLENN	35.838	16.502	52.340
HUMBOLDT	67.275	15.538	82.813
IMPERIAL	153.944	55.470	209.414
INYO	27.760	8.799	36.559
KERN	543.843	138.941	682.784
KINGS	80.328	27.249	107.577
LAKE	39.064	9.828	48.892
LASSEN	39.023	10.264	49.287
LOS ANGELES	5067.903	663.099	5731.002
MADERA	115.490	26.948	142.438
MARIN	161.513	24.160	185.673
MARIPOSA	17.170	3.863	21.034
MENDOCINO	75.011	18.363	93.374
MERCED	167.758	45.503	213.261
MODOC	9.674	2.620	12.295
MONO	17.509	5.877	23.386
MONTEREY	279.140	50.865	330.005
NAPA	75.304	12.681	87.985
NEVADA	71.609	25.810	97.419
ORANGE	1679.120	214.758	1893.878
PLACER	222.190	56.102	278.292
PLUMAS	18.776	4.357	23.132
RIVERSIDE	1320.002	271.278	1591.280
SACRAMENTO	724.532	112.128	836.661
SAN BENITO	39.590	9.572	49.162
SAN BERNARDINO	1396.863	332.281	1729.144
SAN DIEGO	1852.852	294.203	2147.055
SAN FRANCISCO	199.262	25.648	224.910
SAN JOAQUIN	421.054	93.481	514.535
SAN LUIS OBISPO	207.257	41.897	249.154
SAN MATEO	459.052	68.219	527.271
SANTA BARBARA	252.931	45.000	297.931
SANTA CLARA	1039.944	148.654	1188.597
SANTA CRUZ	156.564	22.725	179.289
SHASTA	130.947	37.053	168.001
SIERRA	5.042	1.736	6.778
SISKIYOU	47.528	23.194	70.723
SOLANO	293.334	58.061	351.394
SONOMA	264.270	43.626	307.896
STANISLAUS	274.589	52.541	327.130
SUTTER	54.263	11.038	65.301
TEHAMA	60.714	25.018	85.732
TRINITY	9.474	2.962	12.436
TULARE	239.475	46.772	286.247
TUOLUMNE	37.177	7.815	44.992
VENTURA	460.035	71.014	531.049
YOLO	130.620	37.364	167.984
YUBA	41.061	7.727	48.788
TOTAL	21322.070	3728.457	25050.527

VFC in Million Gallons